

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

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No. 2

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Appreciation and Responsibility

TYPICAL of letters that are being constantly received by the MANUFACTURERS RECORD expressive of the interest of Southern people in its work—letters which are fully appreciated and yet which necessarily make the editors of this publication realize their high responsibility in what they are seeking to do for the upbuilding of the South—are the following voluntary commendations which have come to hand within the last few days:

C. E. Thomas, Chairman Agricultural Committee, Alabama Bankers' Association, Prattville:

I am enclosing you \$6 to pay for two years' subscription to the MANUFACTURERS RECORD. I am getting so that I crave the coming of the MANUFACTURERS RECORD as a schoolboy waits and wishes for Saturday. It is a great paper, and has been worth much to me during the financial depression that now exists, and your optimistic feeling and cool, sound advice is worth much to the Southern reader.

J. A. Jones, contractor and builder, Charlotte, N. C.:

I herewith enclose you my check for four dollars (\$4), covering my subscription in full for the year 1915 to the MANUFACTURERS RECORD. May you continue to be the guiding star to lead the South out of this period of uncertainty and distrust.

W. M. Crook of Crook & Lanneau, engineers, Macon, Ga.:

I am sending you the enclosed for a three-year subscription to the MANUFACTURERS RECORD. I consider this the best magazine of its kind that is published. I look forward every week with pleasure to getting it. As long as I am in the engineering work I hope to have it.

C. D. Wyrick, Bearden, Tenn.:

I can't do without the MANUFACTURERS RECORD. I need it now more than ever before.

BALTIMORE, JANUARY 14, 1915

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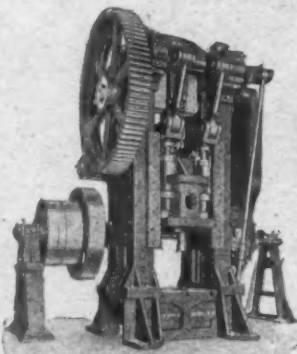
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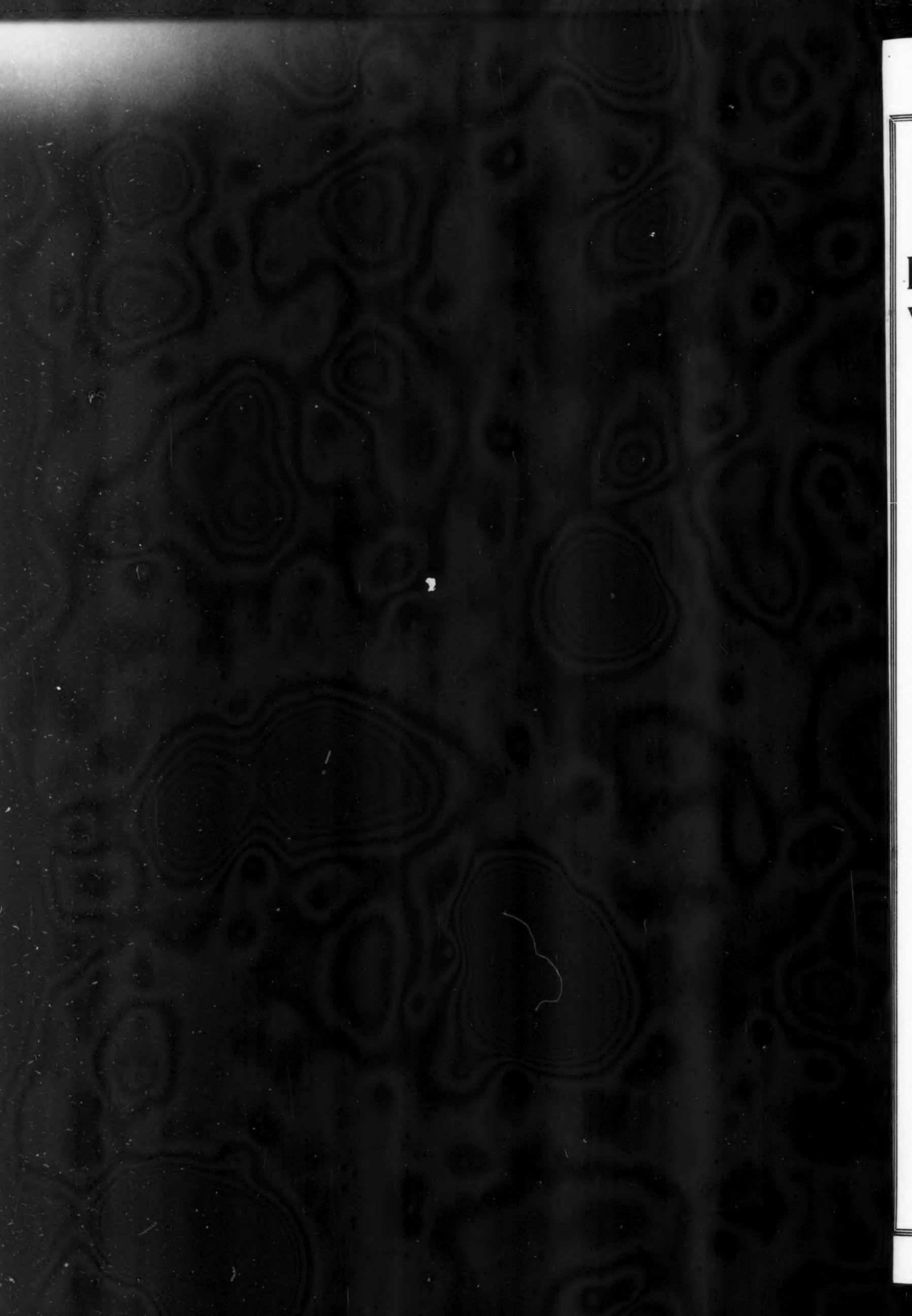
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Dept. 18, Detroit, Mich.



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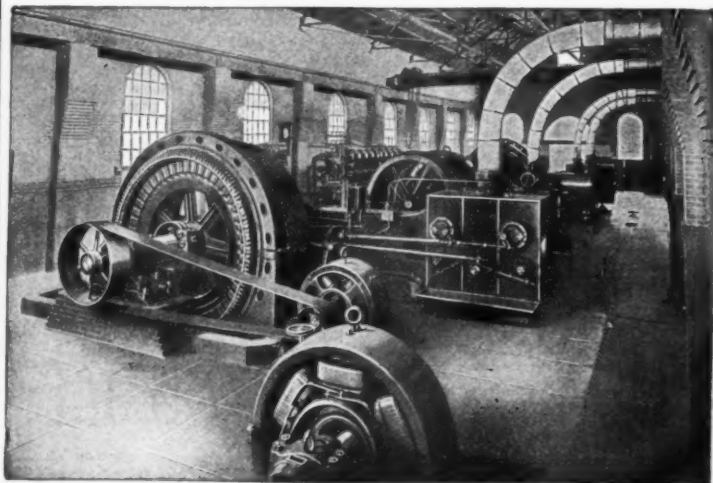
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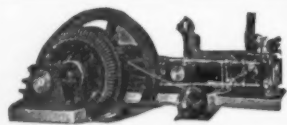
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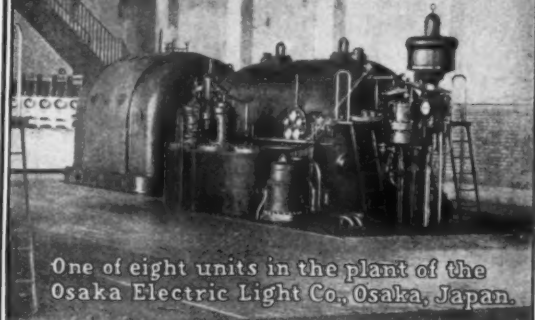


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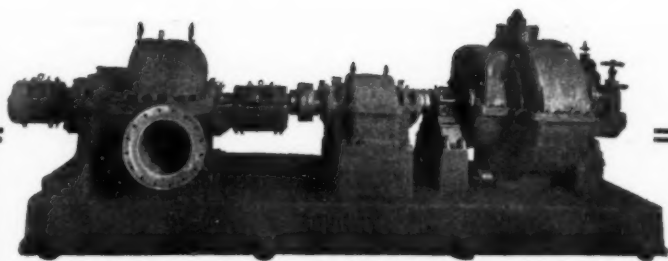
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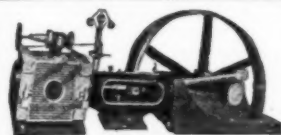
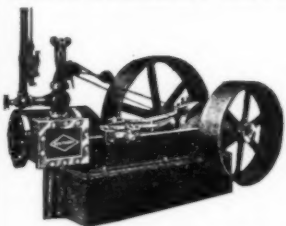
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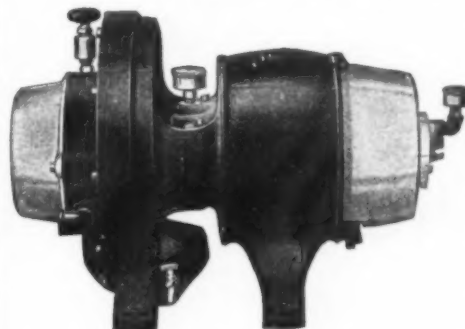
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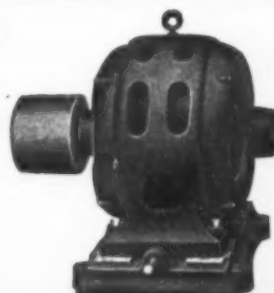
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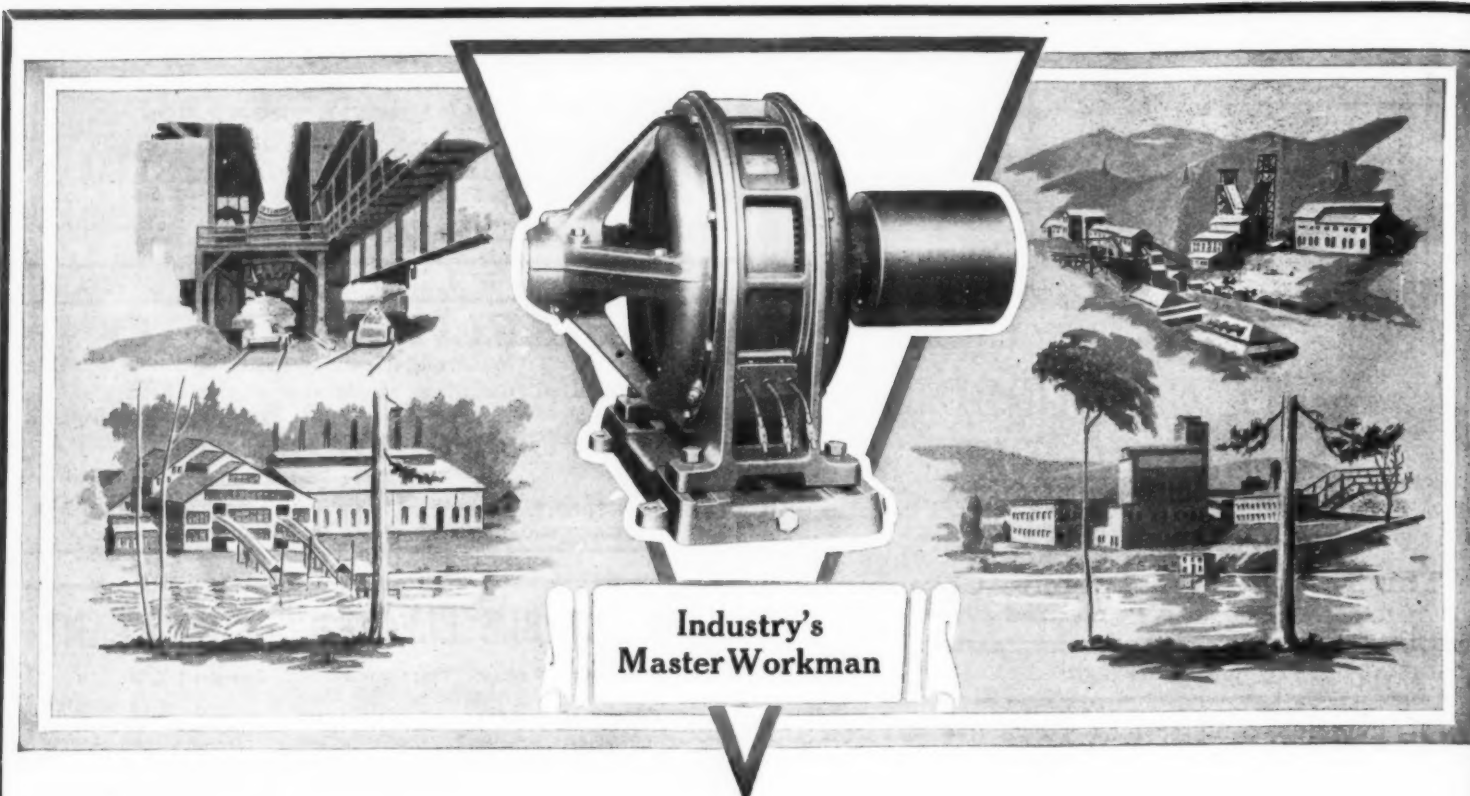
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"And, if we were erecting other boilers would equip them with Huber Bars."

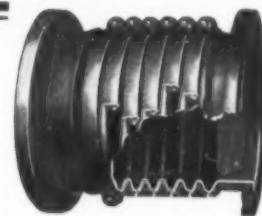
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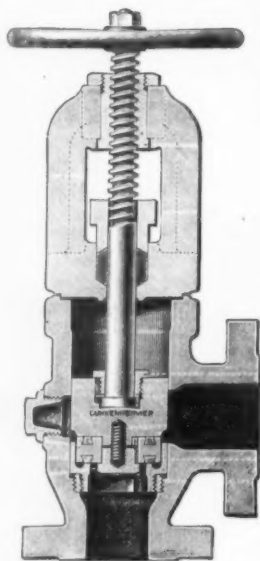
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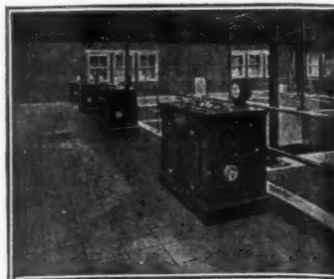
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Are your boilers at their highest possible efficiency?

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Birmingham, Ala., June 22, 1912

Superintendent Gas Department
Subject

Thomas Grate Bar Company
Birmingham, Ala.

Gentlemen:

We have been using your grate bars for the past thirty days burning a mixture of coke and coke braize. Since installing your bars we have dispensed with forced draft, and I would say we are getting 15 per cent increase with less fuel since we only have to clean the fire about one-half as many times as previously.

Yours truly,

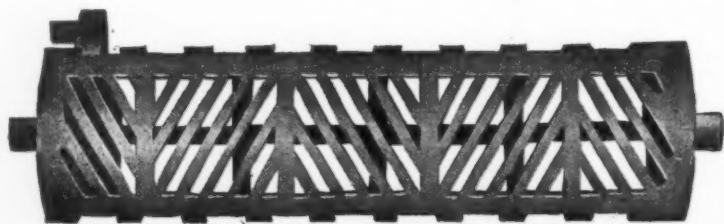
L. G. Greer, Supt. Gas Dept.

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Thomas Elliptic Grate Bars

installed in a plant mean—bringing a plant to the greatest possible efficiency. Saving money on your coal bills and labor cost. The letter above is only one of the hundreds we have from satisfied users. Our illustrated printed matter will interest you.

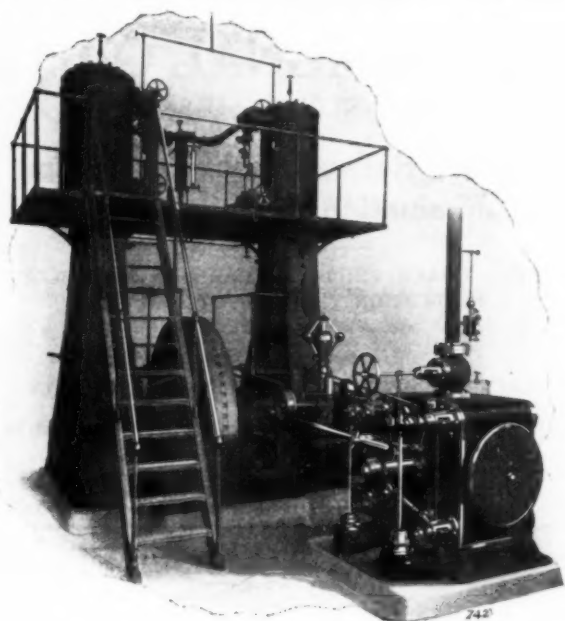


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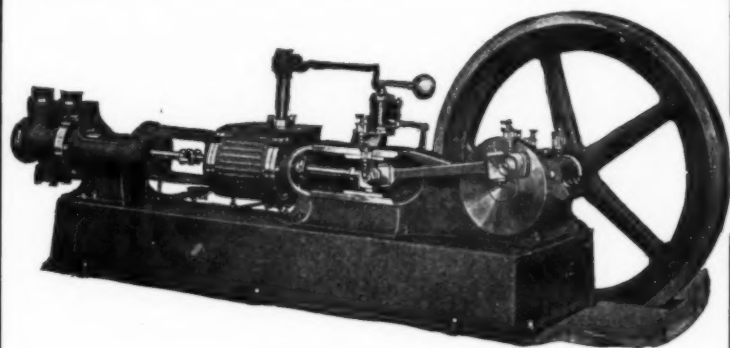
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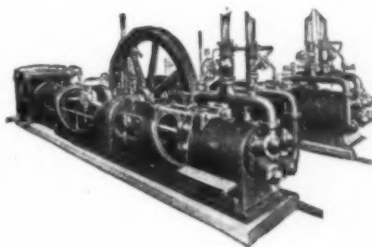
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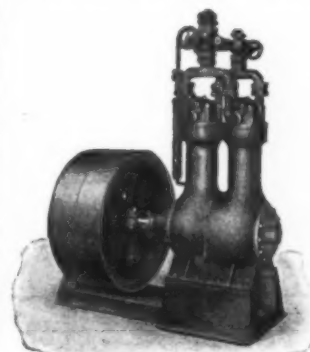
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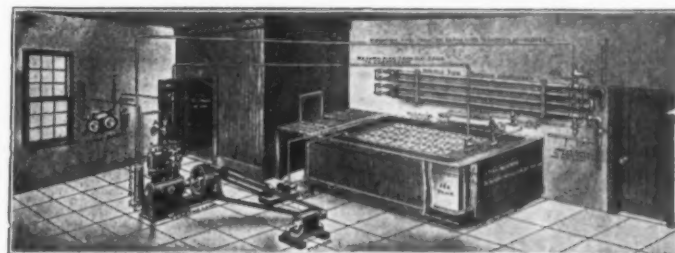
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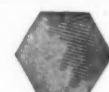
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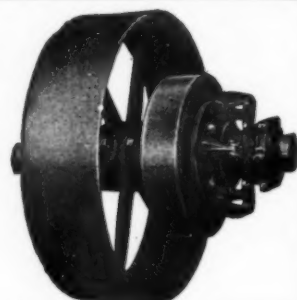


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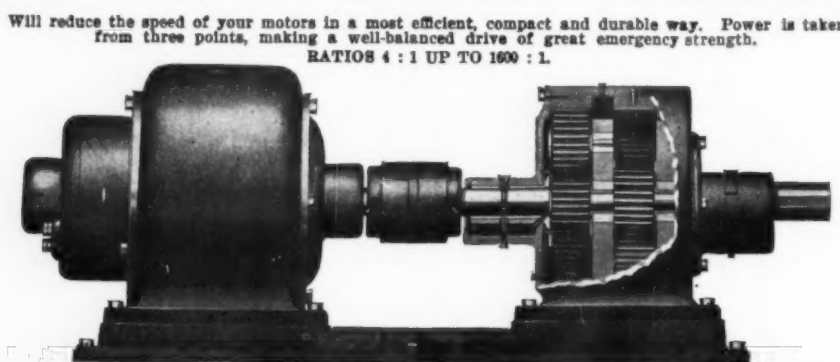
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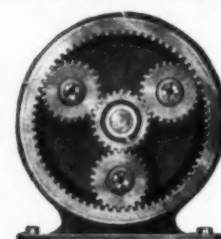
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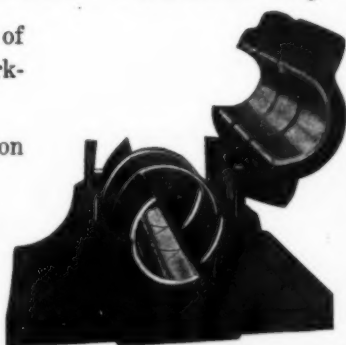
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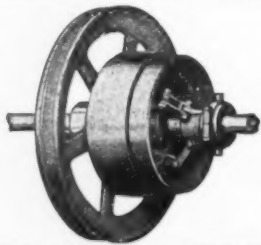
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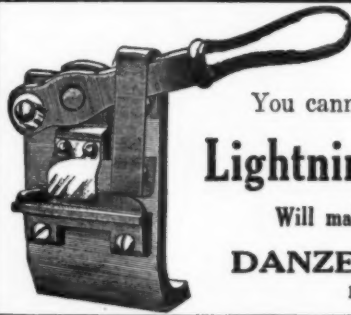
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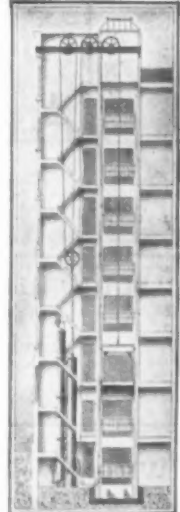


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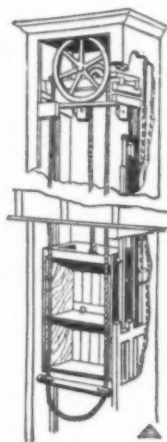
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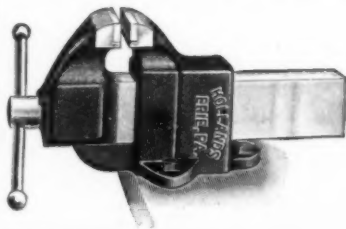
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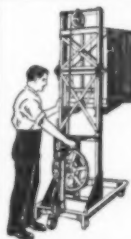
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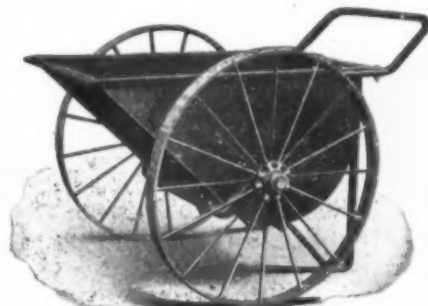
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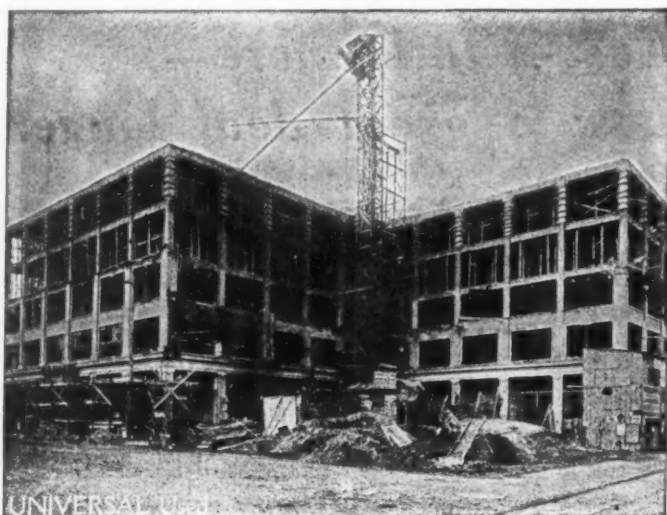
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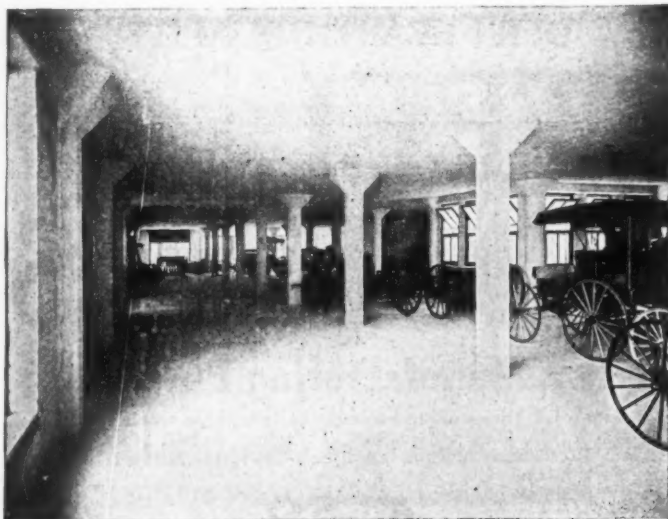


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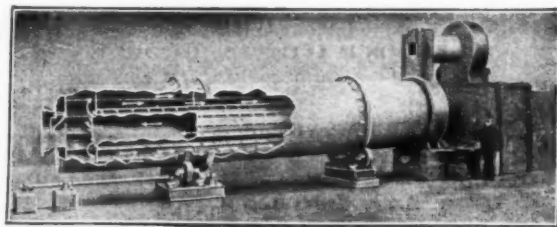
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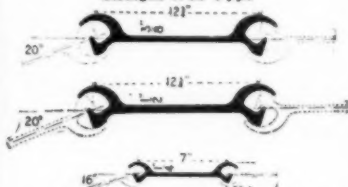
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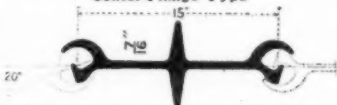
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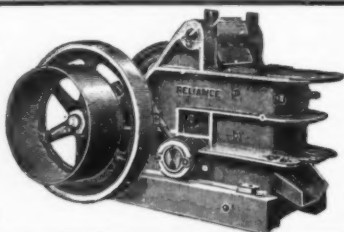
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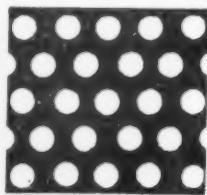
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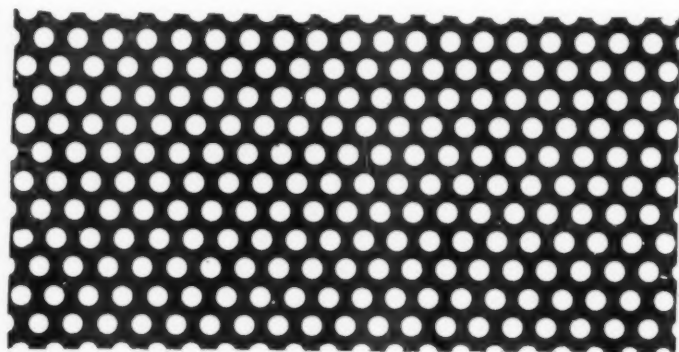
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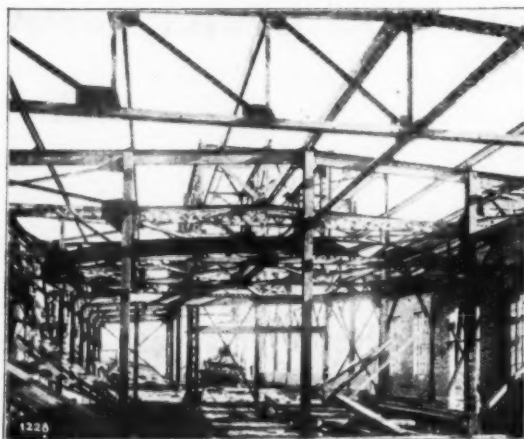
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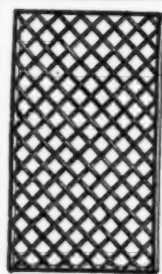
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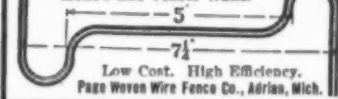
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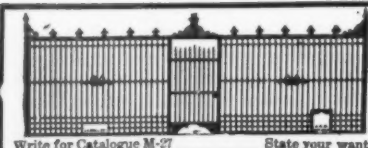
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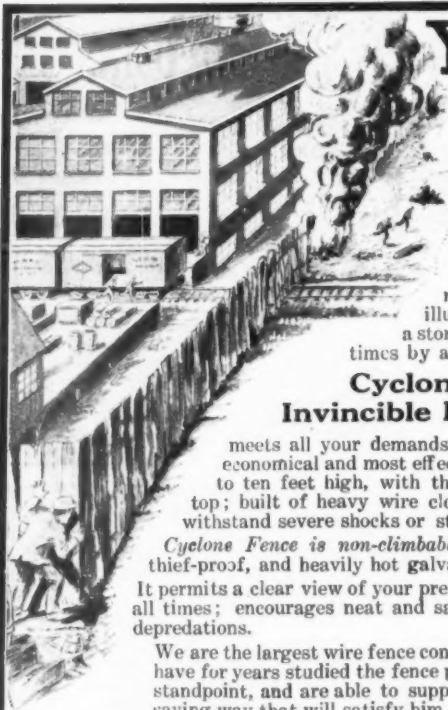


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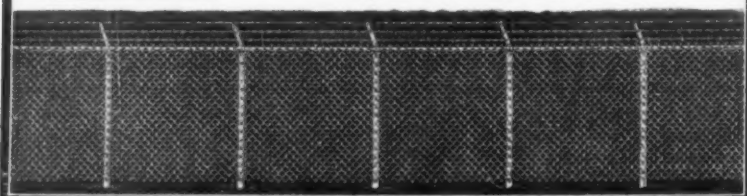
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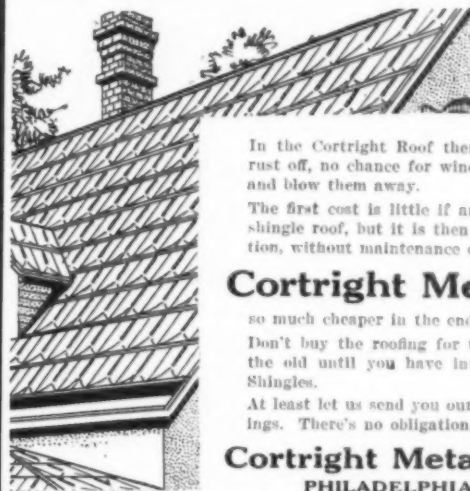
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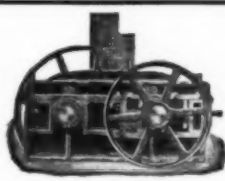
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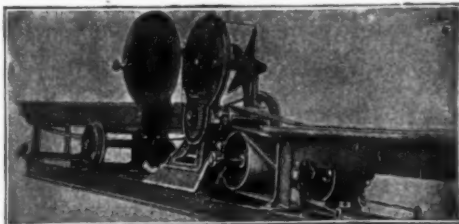
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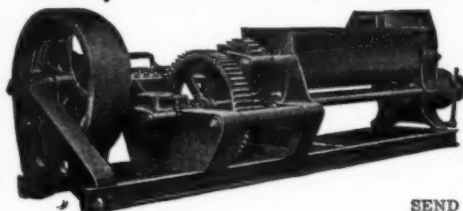
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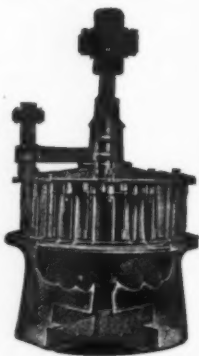
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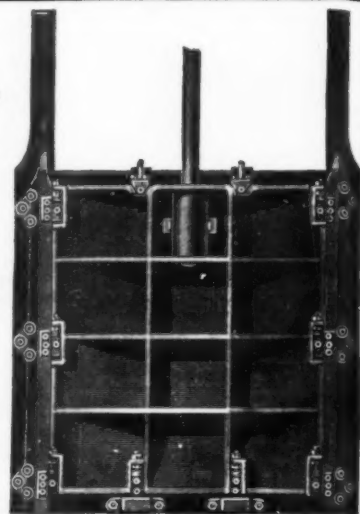


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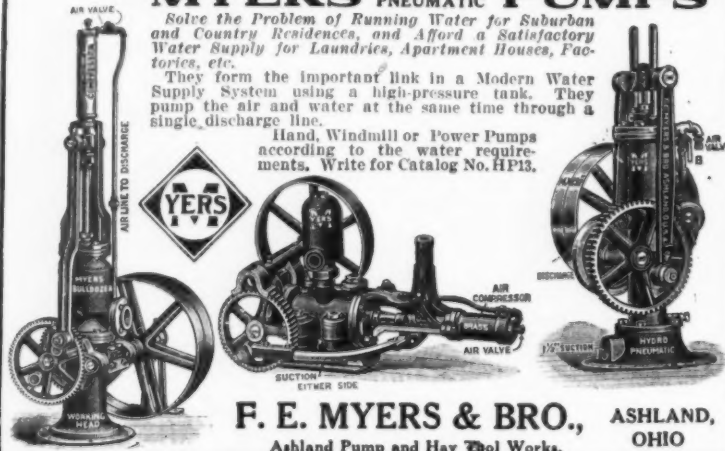


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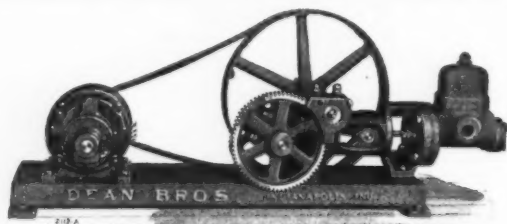
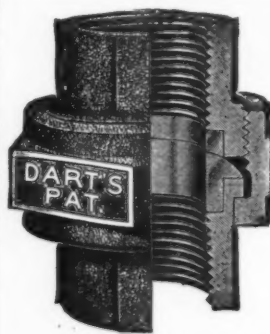
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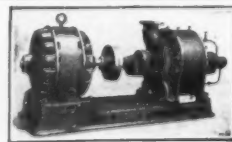
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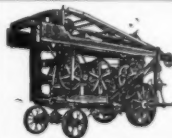
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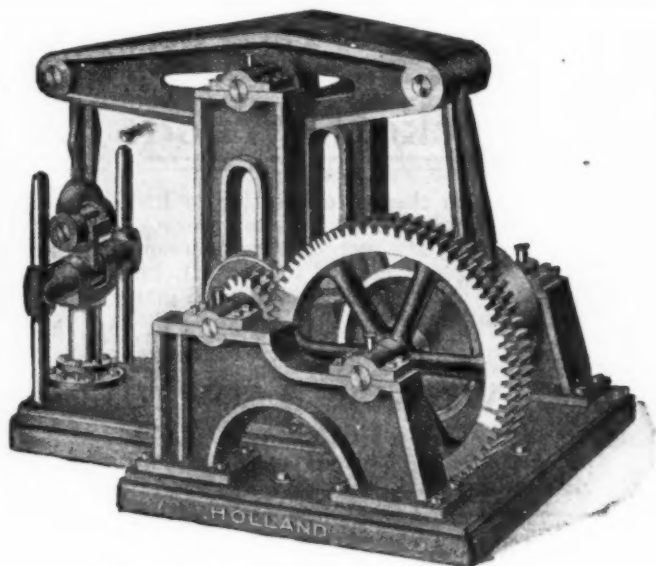
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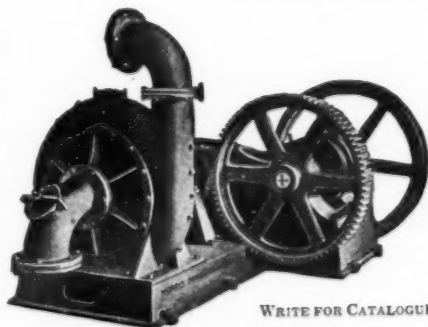
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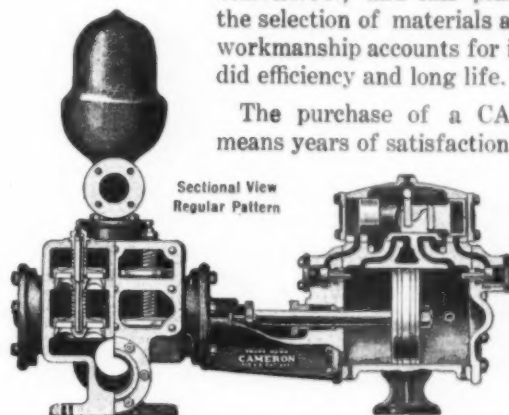
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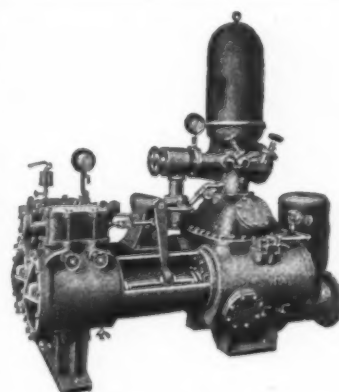


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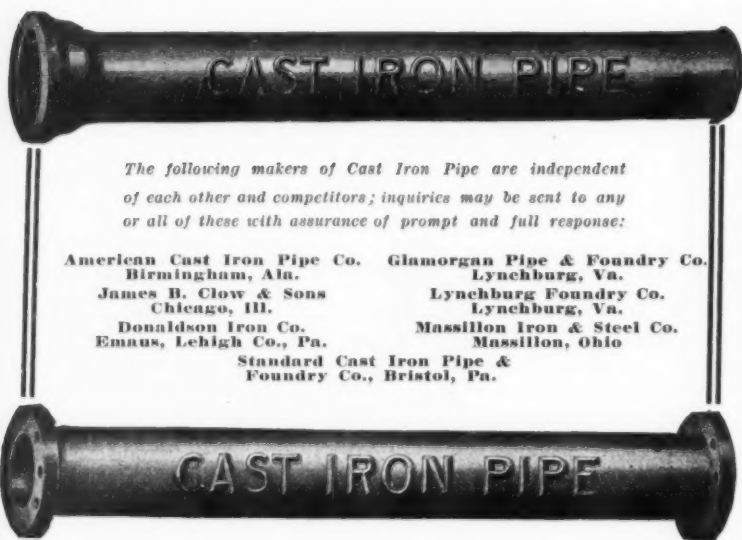
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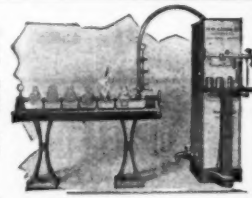
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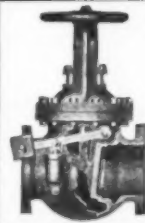
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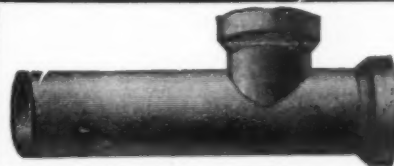
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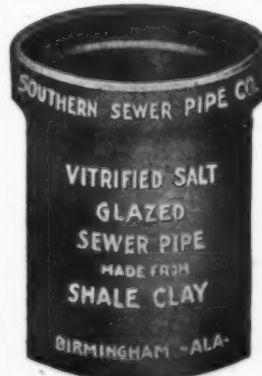
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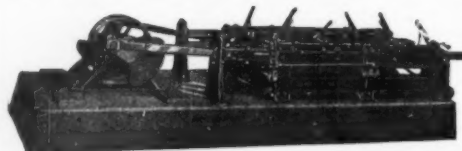
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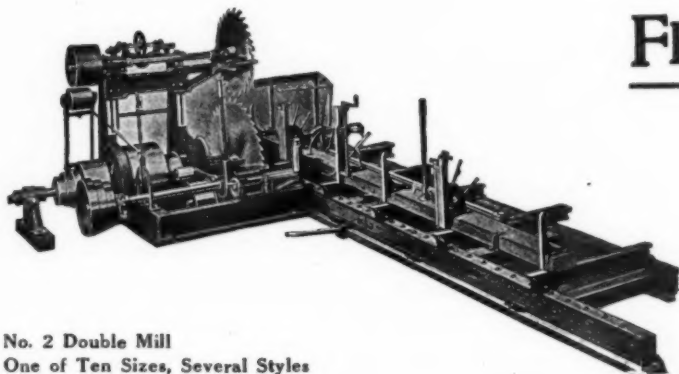
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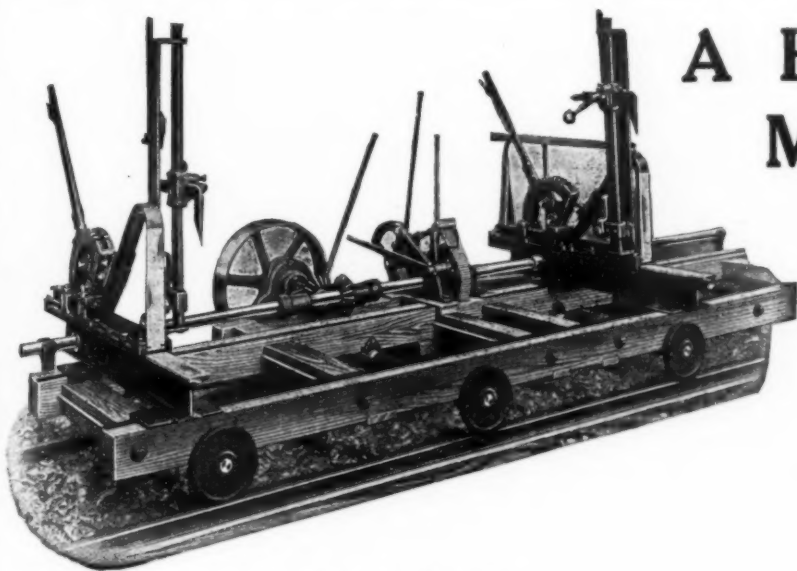
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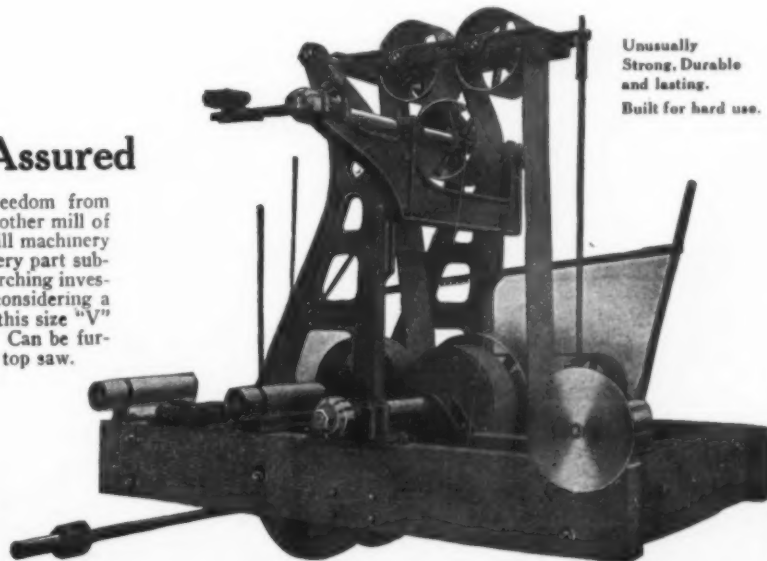
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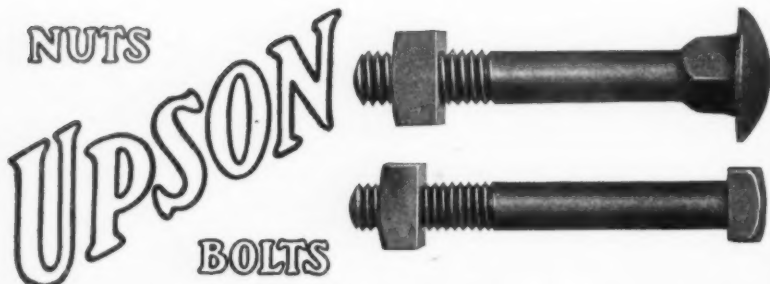
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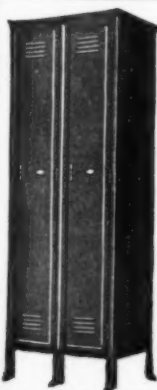
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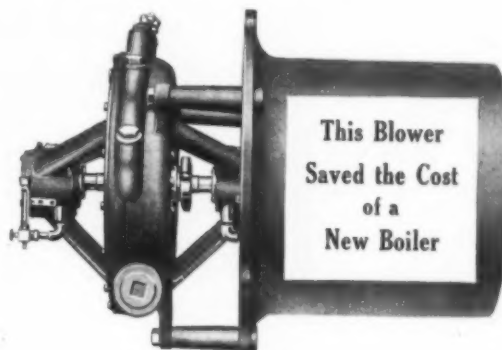
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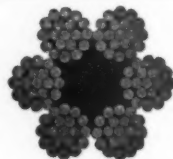
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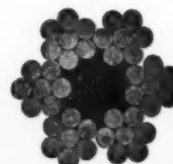


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STRENGTH IN SAVINGS BANKS.

BALTIMORE is one of the few Southern cities in which mutual savings banks are recognized as important institutions in finance. The history of mutual savings banks in New England and other Eastern States is the history of the industrial and other material development in those States with a surplus of capital available for productive investment elsewhere. The history of the mutual savings banks of Baltimore is similar. In their aggregate they represent the accumulations of nearly \$95,000,000, belonging to 220,000 investors. Three of these institutions, carrying 73 per cent. of the total deposits in mutual savings banks in the city, have nearly \$61,000,000 of the savings invested in bonds, \$27,000,000 of these bonds representing investments in the South outside of Maryland and \$11,000,000 of them investments in Maryland. Eight of these institutions, carrying 98 per cent. of mutual savings bank deposits of Baltimore, had on hand December 31, 1914, funds aggregating \$101,496,194.73, an increase over December 31, 1913, of \$807,192.53. Of these funds, money due depositors, including accrued interest, amounted to \$93,221,932.84, an increase of \$726,967.66. During the year these banks received in round numbers from depositors \$31,532,000 and paid to depositors \$33,963,000, including interest, indicating that actual deposits made were greater in the aggregate than the amount of principal withdrawn by depositors. On December 31, 1913, the eight banks had 222,365 depositors. During the year 32,052 accounts were opened and 33,994 were closed, making the total number of depositors 220,429 on December 31, 1914. In the twelve months of a year of much stringency in many lines the number of depositors in these savings banks decreased by less than nine-tenths of 1 per cent., a total of 1936 from 222,365. These facts are a striking commentary upon the savings bank habit as manifested in Baltimore. In every three or less of the population there is one investor by way of mutual savings banks, the average investment being \$423. In spite of all sorts of hard times, the deposits in these savings banks increased by about \$727,000, all but two of them showing gain. With revival of activities in this country there will be a demand for capital from many quarters. What part capital represented in savings bank deposits may play may not be safely predicted, but the experience of such institutions as those of Baltimore, dominated by personal integrity, financial judgment and conservative progress, suggests that other cities of the South may find it to their advantage to establish mutual savings banks of the Baltimore brand which were able to pay to their depositors in one year \$33,963,000 and still not be handling all the funds available for savings bank purposes.

A SUGGESTION THAT THE TIME HAS COME TO SPEAK OUT.

REYNOLDS BROS. LUMBER CO.

Franklin, N. C., January 7.

Editor Manufacturers Record:

Gentlemen—In your issue of December 31 and under the heading of "A New-Year Opportunity to Restore National Prosperity" you have covered the situation and struck the keynote.

We firmly believe that every business man who is capable of weighing such questions will heartily agree with you that our present tariff law is having bad effects on business, and if the question was placed before each individual in the United States today with politics eliminated our opinion is that at least 80 per cent. of them would recommend the repeal of the Underwood-Simmons tariff law in favor of the Payne-Aldrich tariff law or one of about its equal.

Only a few days ago Senator Gallinger introduced such a bill, carrying with it the establishing of a permanent tariff commission. We do not hope to see this carry unless the demand is made by the people, as the majority of our Senators and Congressmen were elected on a platform contrary to such a tariff, but if every business man in the United States could whisper in the ear of our President just what their preferences are, such a bill would be recommended by Mr. Wilson, and with the same pressure brought to bear upon our Congressmen and Senators the change in our tariff laws would be realized without delay.

The day of Government according to set politics of any political party is a day of the past. President Wilson has demonstrated his progressiveness in many ways, and the very idea that we are trying to convey in this letter was introduced by Mr. Wilson in soliciting council with business men.

The people of the South or any other section are no longer inheriting allegiance to politics handed down by ages through political parties, but will advocate the laws that are best for their welfare and business interests, regardless of origin.

We firmly believe that it only remains to secure an expression of the people and convey it to our President and lawmaking body. This is a big undertaking, and yet not impossible, and I believe that the organization of the MANUFACTURERS RECORD can arrange a plan to do it.

The farmer, merchant, miner and manufacturer—in fact, every business man of the South—knows that their interests are your interests, and have confidence in your advice. It is therefore up to you to secure an expression and restore prosperity.

Yours very truly,

REYNOLDS BROS. LUMBER CO.,

G. E. REYNOLDS,

General Manager.

The MANUFACTURERS RECORD publishes this letter with the earnest hope that the suggestion will awaken a widespread interest throughout the South. The writer of it expresses the belief that if the business men of the country could get Mr. Wilson to understand their views he would readily undertake to bring about such changes as they see as essential to the revival of national prosperity.

Too long have the public men of the country depended upon their political henchmen for information as to the needs of the country. This point was emphasized in a letter published in the MANUFACTURERS RECORD last week from President Larkins of the American Lumber & Export Co. of Birmingham, in which, referring to the fact that legislators do not come in direct touch with the business sentiment of the country, said:

On the other hand, the plain, every-day business men, abhorring politics as usually practiced, stayed in the background and said nothing, though it was their ideas that the honest and conscientious Representative or Senator most sought and needed. That is one great trouble with our political situation, and it naturally results in the ideas of the cheap professional politicians prevailing too often in connection with important legislation. We all need to wake up and take a hand. Along these lines, therefore, you are performing a great service to the country.

In a letter from Mr. Larkins, called forth by the publication of his first letter, he writes:

I have noted editorial in current issue which was based on my recent letter and most heartily commend the same. It seems that I have gotten in the limelight, so to speak, without having said much. Had I written something of a highly technical nature, something that few people know

much about, the situation would appear differently. On the other hand, however, what I had to say was a mere statement of facts that every business man knows and realizes and not the result of any deep thought or research. It is strange to me that something has not been said along these lines by many business men before. To my mind it shows very vividly the almost absolute indifference of the average business man to questions of public interest so far as his taking a hand in the discussions is concerned. Now that you have opened the subject and paved the way, here's hoping that our big business men who have great intellect and influence will take a hand and push the good work along.

Every intelligent man in the country knows that the business situation is radically wrong.

Every intelligent man knows that millions of people are vainly seeking employment and that business is at a lower ebb than for many, many years.

Some revival from this condition is inevitable, because we could not much longer continue at the present stage without general business coma. But if we want to bring about a quick, widespread restoration of prosperity which would give employment to the idle, which would bring business to every line of industry and cause optimism to reign on the farm, in the factory and in the counting-room, instead of the pessimism of today, then the people of the country must give voice to their sentiments that the men in public life may know exactly what the country is thinking.

Following the suggestion, therefore, of Mr. Reynolds of the Reynolds Bros. Lumber Co. and of President Larkins of the American Lumber & Export Co., the MANUFACTURERS RECORD invites a discussion of the situation, and it at the same time suggests that every commercial organization in the South could do great good by having a free and open discussion of the causes for the present depression, with the distinct understanding that every man could express his opinion freely and fully, pro and con, on the tariff and the other problems that confront us.

Let us wake up.

The Southern business man is thinking and to some extent he is talking with his neighbors, but he is not making his voice heard throughout the country. In many cases his views are absolutely out of sympathy with the political views of many of the local papers which give voice to views diametrically opposed to what the business men are thinking for themselves and saying to their neighbors.

Let us unshackle the thought of the South and the freedom of expression in the South, and find out where we all stand and what we all believe.

KILL THE SHIP PURCHASE BILL QUICK.

THE MANUFACTURERS RECORD has labored for so many years to awaken this country to the importance of a merchant marine, and has warned the country, and the South especially, of the dangers from every point of view of depending upon foreign shipping rather than build up our own shipping interests, that it would be inclined to view with favor almost any proposition which in its judgment would bring about this much-needed result. We are compelled, however, to dissent from the opinion expressed by President Wilson in favor of the proposition now before Congress for the purchase by the National Government of foreign ships. The reasons against the plan are so overwhelming that it is difficult to understand how anyone familiar with the shipping interests of this and other countries could favor such a project, and especially at the present time.

In the first place, we believe that it would be a fatal error for this Government to undertake to engage in the purchase or ownership of ships for

commercial purposes. There are many very strong reasons against this, and so far as we can see not a single one in favor of it. Such a movement would embark this country upon a project fraught with many dangers in our international relations, as well as in the economic development of our merchant marine, which cannot be built up on such a basis. Moreover, it would sound the death knell of our existing shipping interests, for who would invest money in ships to operate in competition with Government-owned ships?

In the second place, it would be practically impossible at the present time to purchase any ships of importance except the interned boats owned by German lines. Under no conditions whatever, in view of possible international complications and the unwisdom of such an act, ought we for a moment to consider as a nation buying these German ships. We would justly bring down upon ourselves the condemnation of other countries and place this nation in an embarrassing attitude in all of its international relations.

So great is the demand for ships by reason of the fact that a large part of the world's shipping has been turned to the arts of war rather than to the arts of peace, or interned in neutral ports, that freight rates are very high. Shipowners whose vessels are able to engage in commerce are at the present time making such extraordinarily large profits that none of them would be so foolish as to sell ships of this kind except at prices far beyond their value under ordinary conditions.

The shipyards of Great Britain make a business of building ships for the market without waiting for orders. A great many ships are now under construction in these yards, but there is ample capital available in Great Britain for the purchase of these ships, and English shipping men can readily take over every boat that is worth buying, and be glad to get it in order to put it into commission at the earliest moment possible that advantage may be taken of the exceptionally high rates of freight now prevailing. No shipbuilder would for a moment think of selling a ship ready for the market except at a high figure at the present time.

This country, therefore, would be left practically without the ability to buy ships except at exorbitant figures far beyond their intrinsic value under ordinary conditions, or else purchase the interned ships, which are available only because the English navy has swept the seas of German commerce.

If conditions had been reversed and English ships had been interned in our ports, the MANUFACTURERS RECORD would be equally as opposed to their purchase, on the ground that such action would be bordering so closely on international complications as to be most unwise.

At the present time it behooves the people of this country, its officials and its newspapers to be extremely careful and avoid everything that would tend to broaden the horrors of the indescribably horrible war which engulfs Europe. When a conflagration is sweeping over so large a part of the world and has gotten beyond the world's control, it is preeminently important that we should not play with firebrands, even if we feel that we have a right legally to swing firebrands in the air. It is incumbent upon this country to lessen the world's irritation, even if we have to overlook many difficulties and be less self-assertive of what we believe to be our own rights.

This is not a time when this country can afford to do anything whatever tending to increase the world tension. This nation is great enough and strong enough, if it has the moral backbone and courage, to ignore many things which under ordinary circumstances it might have the moral right to contest. It is, therefore, especially incumbent upon us not to undertake any measure as a nation, such, for instance, as the purchase of interned ships, even if that purchase would give us a temporary commercial advantage, calculated to increase the world's hard problems and add to the world's stock of antagonism. In this case, however, the MANUFACTURERS RECORD is thoroughly convinced that such a movement, however strongly President Wilson and his advisors may favor it, would produce no good results, but would certainly bring forth evil.

The suggestion that ships cannot be had to carry our products abroad is without weight in view of the

fact that we are now exporting 8,000,000 to 10,000,000 bushels of grain a week, and a vast quantity of cotton and other products. It is true freight rates are high, but this is one of the inevitable results of the war. It is likewise true that wheat is high. Farmers are selling their wheat at a higher price than during the last quarter of a century—a fact due to war conditions. Why should we, therefore, fail to take into account the same war conditions as responsible for the present freight rates on ocean commerce?

In his vote to annul the freedom from tolls for American vessels engaged in coastwise trade through the Panama Canal President Wilson took the ground that he was doing so from a high sense of honor that this nation might stand before the world above possible criticism of its national honor, notwithstanding the fact that his own party, as well as other parties, had heartily commended the provision for freedom of tolls on American coastwise shipping. President Wilson has vigorously opposed a subsidy to American shipping interests, but now he favors a plan which would be regarded by a large part of the world as a violation of national honor and which would be the rankest kind of subsidy to shipping.

The MANUFACTURERS RECORD believes in a subsidy for an American merchant marine. It has favored this for more than a third of a century. It believes that if our people had been wise enough to see the importance of it we would now have under our own flag shipping ample to meet all of our requirements. But we are paying the just penalty of following the doctrines of those who have for many years preached against the subsidizing of American-built and American-owned ships. Not until we make possible the building and the ownership of ships by Americans, and the largest development of our shipbuilding interests, and the lessening of the burdensome cost of operating American-owned ships placed on our statute books merely at the dictation of the union-labor interests of the country, will we be able to own and operate a large merchant marine. Instead of proposing a plan to buy foreign ships, and especially under present international conditions, it would be infinitely better for Congress to pass a bill giving such encouragement to shipbuilding in this country as would promptly fill every yard with work and result in the establishment of other shipyards.

The MANUFACTURERS RECORD would, with all the emphasis that it can possibly lay upon the matter, based on a study for more than thirty years of the shipping interests of the world, protest against the passage by Congress of the shipping bill which President Wilson is favoring. We wish that it were in our power to commend a measure advocated by President Wilson, but we are compelled, with all the urgency that we can put into the subject, to warn the country that this measure, if enacted, would be fraught with vast dangers and would be productive of certain harm. It would destroy instead of up-build our merchant marine. The amount of money involved is so ridiculously small that all the ships that would be bought under such a plan would have scarcely a flea's weight in meeting our requirements or in lessening freight rates so long as the war lasts. The whole plan ought to be laughed out of court if it were not so seriously urged by President Wilson.

CHOSE YE, POVERTY OR PROSPERITY.

BRADSTREET'S reports that 1914 showed that the number of failures was the largest in the history of the country since that organization commenced compiling the statistics of business interests. The total number of failures for the year was 16,759, an increase of 2206 over 1913, 2715 over 1908 and 6494 over 1907, the panic year, in which we thought the country had almost reached the high-water mark of business disasters. The aggregate amount of liabilities of failures in 1907, due to the failure of many very large concerns, was somewhat greater than the liabilities in 1914, but this is an unfortunate record against last year in that it shows that the disasters of the year were widespread and affected the small as well as the larger business interests of the country. Indeed, the failures in 1914 were about 60 per cent. greater in numbers than the failures in 1907.

This is a sad record of disasters. It is an indica-

tion of the widespread depression which now finds expression in the hundreds of thousands of idle people who walk the streets of the towns and cities of the country vainly seeking work. It is an unanswerable argument against the theories of those who have talked about unshackling trade and commerce and developing the prosperity of the nation by a free-trade propaganda.

These facts should cause the country to pause and study the situation. Pet theories and hobbies may be very beautiful, but when they run against stubborn facts of this kind there is nothing left of the theories. The facts still live. A celebrated orator, who was once enunciating some beautiful theories, was told that the facts did not support his argument. "Facts," said he, "embarrass me." He was willing to admit that facts, contrary to his arguments and theories, did embarrass him, but many of the public men of today prefer to shut their eyes to facts and to fondle with delight their pet theories.

What answer will the millions of people in this country, whose loss of business and of profits and of employment are the staggering facts of the day, make to the theories of the politicians?

Every man may well ask himself, Do I want poverty or prosperity?

HEAVY EXPORTS OF COTTON AND GRAIN TO EUROPE.

IN view of the published statements to the effect that it is impossible to get ships to carry our cotton and grain abroad, it is interesting to note that for the week ending January 8 this year the exports of raw cotton aggregated 343,613 bales, as compared with 227,967 bales for the corresponding week of last year, and that for the week ending January 2, the last week for which full statistics of all grain are available, the total exports were 8,641,708 bushels, compared with 4,570,405 for the corresponding week of 1914, showing that during that week the exports of grain from this country were almost double the amount of the corresponding week of last year. For the same week of this year the exports of flour aggregated 298,601 barrels, against 177,239 barrels for the corresponding week of last year.

The exports of wheat and corn for the week ending January 9 were 11,047,250 bushels as compared with 6,468,000 bushels for the corresponding week of 1914, showing a steadily increasing gain in the volume of grain shipments.

These statistics indicate how the exports of cotton and grain at present are running far ahead of the same time last year, and are indicative of the availability of ships to take care of our foreign trade and of the heavy demand in Europe for grain, flour and cotton.

It is true that the rates of freight are high, but the price which is now being paid to the farmer for grain is also so high that some Congressmen are even beginning to discuss the question of putting an embargo on grain shipments—a wholly uneconomical proposition.

Owing to the fact that but little cotton was exported early in the season, foreign shipments to September 1 were only about one-half as large during the same period in 1913-14.

The enormous exports of wheat, which last week exceeded 10,000,000 bushels, show the urgency of Europe's effort to secure an ample supply. These heavy shipments at the prices prevailing will add largely to the prosperity of grain growers, though they will also add to the cost of living in this country.

The high price of wheat and flour emphasizes the necessity for the South to plant as largely as possible of foodstuffs and feedstuffs. It should prepare to double its corn crop, while decreasing its cotton crop. It must also give immediate attention to increasing its production of hogs and cattle and garden stuff, or else it will pay a heavy penalty for its failure to do so by having to pay exorbitant prices for all of its food supplies.

The time is near at hand when in the far South plowing will be under way for corn. It behooves everyone, whether he be a producer or a consumer only of farm products, to do all in his power to encourage the largest possible acreage in grain and the largest increase that can be made in livestock raising with a minimum acreage in cotton.

AN ECONOMIC PROPOSITION FOR SOUTHERN FARMERS.

ELEVEN Southern States which in 1914 raised corn, oats, hay and wheat to an aggregate value of \$630,353,000 spent in that year more than \$203,000,000 for corn, oats, hay and wheat, including flour, brought from other quarters. That amount was within \$95,000,000 of the difference between the returns from the cotton crops in those States in 1913 and 1914, estimated upon the basis of the prices obtaining on December 1. If these foodstuffs and feedstuffs that were brought into these States had been raised at home, the value of these agricultural products of the eleven States in 1914 would have been only about \$100,000,000 less than in 1913, in spite of the decline in the price of cotton.

As a matter of fact it is too early to state with any degree of positiveness what the South will ultimately

receive for its 1914 crop of cotton, with seed. Estimated at December 1 prices, the cotton crop of the whole South, with its seed, has a value of about \$650,000,000, compared with \$1,032,000,000 in 1913, a difference of \$382,000,000. Had war not intervened just as the 1914 crop began to come upon the market, conditions were such, anyhow, that the total value of the 1914 crop would have been considerably less than that of the 1913 crop. The value of the latter is estimated upon the price of 12.2 cents a pound on December 1, 1913. With depression in the textile industry in two or three of the European countries which buy Southern raw cotton, with a large stock of cotton goods in another European country, an increase in Southern production averaging 25.9 pounds to the acre and aggregating \$84,205,000 pounds, or 1,768,400 bales of 500 pounds each, it is doubtful whether, even in the absence of the radically disturbing factor of foreign war, that the December 1, 1914, average price would have been much more than nine cents a pound, which would have meant an aggregate value for the crop of cotton alone of \$687,000,000, or nearly \$201,000,000 less than the aggregate value of the preceding crop. But that is, of course, all conjecture, just as the estimate as of December 1, of

Table A.—Estimated Value of Foodstuffs and Feedstuffs Shipped Annually Into Eleven Cotton States.

States.	Wheat.*	Corn.	Oats.	Hay.	Total.
Alabama	\$10,030,000	\$7,189,000	\$1,921,000	\$1,206,000	\$20,346,000
Arkansas	5,449,000	3,379,000	1,059,000	1,110,000	10,997,000
Florida	4,504,000	5,930,000	1,287,000	1,344,000	13,065,000
Georgia	11,974,000	9,146,000	2,836,000	2,119,000	26,075,000
Louisiana	8,042,000	4,806,000	730,000	840,000	14,418,000
Mississippi	7,717,000	8,185,000	763,000	826,000	17,491,000
North Carolina	5,810,000	4,379,000	1,125,000	1,520,000	12,834,000
South Carolina	7,748,000	11,787,000	2,075,000	1,413,000	23,023,000
Tennessee	2,418,000	768,000	1,738,000	4,543,000
Texas	15,235,000	29,653,000	4,813,000	2,550,000	52,251,000
Virginia	1,679,000	2,803,000	558,000	2,960,000	8,000,000
Total	\$80,606,000	\$87,257,000	\$17,935,000	\$17,626,000	\$203,424,000

*Includes flour.

consciousness as to Southern agriculture generally, and at the same time will emphasize the facts of Southern farm production. In this connection the accompanying table, B, is of interest.

The area which in 1914 yielded cotton to the value, as at present estimated, of \$519,616,000, or, with its seed, about \$601,000,000, was 36,722,000 acres, an average value per acre of about \$16.62. An area more than twice that devoted to cotton was planted in ten other crops having a total value of \$1,232,371,000 and an average acre value, in spite of seasonal conditions unfavorable to some of them, while exceptionally favorable to cotton, of \$16.16 per acre. At the same time the December 1 price of corn, Irish potatoes and tobacco was less in 1914 than in 1913—a factor to be considered. But it should also be noted that Irish potatoes sold at an average acre value of \$51, sweet potatoes \$65, rice \$31 and tobacco \$73.

To the \$1,232,371,000 obtained for the ten crops mentioned in the South should be added at least \$1,075,000,000 for animals sold or slaughtered, poultry and eggs and dairy products, and \$234,000,000, for miscellaneous vegetables, orchard, citrus and small fruits, peanuts, sugar-cane, sorghum, peas and

beans, kafir corn, broom corn, nuts and grapes, etc., to arrive at the total sum of the value of Southern agricultural production, exclusive of cotton. That total is \$2,541,000,000, or three times the value of 1914 cotton crop, with its seed, as at present estimated. Could that proportion be maintained, with cotton bringing from 12 cents to 14 cents a pound, as would more likely be the case than under the conditions that have prevailed for many years, the South would enter upon a period of agricultural prosperity in which an expenditure of \$300,000,000 or \$400,000,000 a year for foodstuffs and feedstuffs brought from other quarters of the country would be remembered as like some economic nightmare.

Table B.—Acreage and Value of Ten Crops in the South and in the Whole Country in 1914 Compared.

	Acreage.		Values.	
	South.	United States.	South.	United States.
Corn	48,240,000	103,435,000	\$701,698,000	\$1,702,599,000
Wheat	10,251,000	53,541,000	169,447,000	878,680,000
Hay	8,564,000	49,145,000	123,628,000	779,068,000
Oats	6,069,000	38,442,000	71,976,000	499,431,000
Irish potatoes	601,000	3,708,000	30,658,000	198,069,000
Barley	46,000	7,565,000	869,000	105,903,000
Tobacco	1,012,300	1,223,500	73,948,000	101,411,000
Sweet potatoes	552,000	603,000	36,183,000	41,294,000
Rye	234,000	2,541,000	2,915,000	37,018,000
Rice	678,530	693,530	21,049,000	21,849,000
Total	76,247,830	260,897,030	\$1,232,371,000	\$4,365,862,000

\$519,616,000 for the 1914 raw cotton is subject to revision within the next few months. One fact is certain—more than half of the 1914 cotton crop is yet to come upon the market. In the first five months of the 1913-14 season nearly 70 per cent. of the crop had come into sight. The 53 per cent. of the crop of the present season still to come upon the market may mean a greater value for the whole crop than the estimate of December 1, or a less value, just as it is handled by its owners in connection with wisdom or lack of wisdom in determining the acreage to be planted to cotton this year.

The figures of \$203,000,000 sent to other quarters last year by eleven cotton States for supplies of food-

THE "BUILD NOW" CAMPAIGN.

FOLLOWING the policy suggested by the MANUFACTURERS RECORD to "Build Now," the building-supply people and the contractors of Augusta, Ga., have presented through a page advertisement in the Chronicle of that city a very striking illustration of the wisdom of building now. In this advertisement the names of lumber dealers, brick manufacturers, plumbers, tinners, builders' hardware dealers, architects, contractors and others who will make special prices as compared with former prices for work undertaken at once are given in detail, showing that in these various lines there will be a decrease in price of from 10 to 25 per cent. on work undertaken now. The plumbers offer 7½ per cent. off; the brick manufacturers, 16½ per cent.; lumber dealers, 10 per cent.; architects, 20 per cent. These reductions or discounts are based on prices prevailing prior to the depression in business. Detailed estimates are given as to the cost of erecting a house which, without these reductions, would cost \$4700, but which it is figured may now be built for \$3900, provided the work is undertaken at once. In this advertisement urging that the people of Augusta "build now" it is said:

The building trades are going to co-operate in this great movement, too. They have already shown the right spirit in this community effort to find employment for the unemployed. They are going to meet the material men, whose sweeping reductions are quoted above, half way, to the end that building operations may be immediately resumed in this city by offering inducements to people to build, and build now.

This is a practical plan, which has been announced in Augusta through the Merchants and Manufacturers' Association of that city, that ought to be taken up and intelligently studied, and wherever feasible vigorously pushed in every other town and city in the South; indeed, for that matter, in every town and city of the country. There are tens of thousands of people in this country who anticipate building a home, a shop, a factory, a warehouse or a store within the next year or two and who are abundantly able to finance such work at present. There are thousands who want to do some one of these things, but who are not financially able to do it now. Those who are able to do so would find this a most propitious time for effecting these large savings in construction work, and while reducing the cost of their undertaking give work to the unemployed and create a demand for building material of all kinds just now when work is so badly needed and when there is such a lack of demand for building supplies.

We believe that the MANUFACTURERS RECORD has never put forth a suggestion that has commanded wider attention or been more vigorously discussed than its "Build Now" campaign, which it has been vigorously advocating since it first made the suggestion a few months ago.

Let the country "build now" wherever it can be done, and we shall soon see a great improvement in general business conditions, despite the adverse influences in the political field which still militate against the broadest national prosperity.

Heavy Sale of Corrugated Bars.

A dispatch to the MANUFACTURERS RECORD states that the Corrugated Bar Co. of Buffalo has received a contract for 6,400,000 pounds of corrugated bars to go into the construction of the big cotton warehouse described in detail in our last issue, and for which Ford, Bacon & Davis of New York and New Orleans are the engineers. This is an exceptionally large tonnage of reinforcing bars for one contract. The shipments are to be made during February, March, April, May and June, the work to be completed by August.

At a meeting at New Orleans, La., on January 19 will be submitted the perfected plan of the Southern Pine Association recently organized.

Sponge sales at Tarpon Springs, Fla., aggregated about \$400,000 in the past six months.



SKY LINE OF CINCINNATI AS SEEN FROM THE SOUTH, AT COVINGTON, KY.

CHARACTERISTICS OF CINCINNATI.

Facts About a Center of Trade Between the North and the South.

[Special Correspondence Manufacturers Record.]

Cincinnati, O., January 12.

Cincinnati was settled 126 years ago, as a trading post, with an idea of doing business mainly with the South. The explorers that founded the city came down the Ohio River in search of a section of tableland, and what is now Cincinnati was selected on account of its levelness and general adaptability for a settlement.

As the years have passed, its business relations, which at all times have been the best, have increased with the development of the trading "post" and the section to the south of it. Both Cincinnati and the South have undergone wonderful changes since the former was founded, and the development of their resources have been correspondingly great.

Located, as it is, at a strategic point on the Ohio River, so that business can be conducted easily with the upper part of the Southern States and with the middle South through the merging of the Ohio and Mississippi rivers at Cairo, Ill., Cincinnati has, since its establishment, made itself an important factor in Dixie trade through those channels. The prestige thus gained when it was only a trading post, during the latter part of the eighteenth century, has been preserved, and there remains a good feeling between the two communities.

As the railroads were established and began to compete more and more with inland water transportation, Cincinnati realized its responsibility and saw its opportunity. Individuals and different groups of business men made several futile efforts to establish a railroad that would retain the Southern trade Cincinnati had from its river routes prior to the year of 1880. In that year the Cincinnati Southern, now operated under lease from the city as a part of its system by the Cincinnati, New Orleans & Texas Pacific Railway, was completed and put into operation at a cost of \$25,000,000 from Cincinnati to Chattanooga. This was a municipal undertaking, bonds having been voted by the city of Cincinnati to finance the project.

Two years after the establishment of the railway connection with the middle South, to further the relations between Cincinnati and its Southern territory, the Southern Exposition was held here. The MANUFACTURERS RECORD, which was established in February preceding the exposition in the fall of the same year, devoted one of its issues to the Southern Exposition here, in collaboration with the Cincinnati people.

Covington and Newport, Ky., which are just across the Ohio River from Cincinnati, and are in themselves good-sized cities, have shared in the growth and virtually constitute a part of Cincinnati. Many of the large manufacturing plants which do business under the Cincinnati date line are in reality in one of its Kentucky suburbs.

Cincinnati is a modern city, with most highly cultivated commercial instincts. It has 900 miles of streets, 608 of which are improved; more than 2000 acres of parks, \$130,000,000 worth of municipal property, an educational system from kindergarten to municipal university, night elementary and high schools, and \$10-

000,000 sanitary sewerage system. Seventy-six and eight-tenths per cent. of the homes owned are free from incumbrance. It is noted as a manufacturer of wood-working machinery, machine tools, prison and ornamental iron, cigar boxes, acids, bookcases, playing cards, printing inks, soap, copper stills, laundry machinery, printed posters, women's cloaks, men's caps, baseballs and baseball supplies, clothing, electrical machinery and street cars.

The first weather bureau that was operated in the United States was started here in 1839 and run as a department of the Chamber of Commerce, at the expense of the latter for years before it was finally taken over as a part of the present Government system.

Cincinnati is described as the most "southerly Northern city" in the United States. Both sections have occasion to be proud of its development, resources and possibilities, as both have shared in them about equally.

ROY G. BOOKER.

Uniform Specifications for Boilers.

In a recent address before the second Pennsylvania Industrial Welfare and Efficiency Conference, held at Harrisburg, Thomas E. Durban, general manager of the Erie City Iron Works, Erie City, Pa., put before the public in an emphatic manner the urgent need for the prevention of boiler accidents by adopting uniform boiler specifications. Mr. Durban said in part:

"With all the care and protection that is being taken to guard life, there has been no State legislation in Pennsylvania on steam boilers, and a steam boiler explosion is one of the most dangerous things that can possibly happen and may be destructive of a great number of lives and a vast amount of property, due to improper construction and inspection, due to the fact that the purchaser of the boiler has not been surrounded with proper safeguards.

"Investigation of the records of insurance companies will show that a large number of lives and a vast amount of property is sacrificed every day because of the lack of supervision of steam boilers.

"The boiler makers throughout the country have been trying for years to get adopted a specification which would insure, as far as possible, the safety of their product. A number of States in the Union have taken this matter up and legislated upon it in a most intelligent way, and with the forward movement toward safety the time is most opportune for legislation on the boiler subject. The necessity for legislation not only exists on the matter of safety, but also from a practical viewpoint of the manufacturer and purchaser of boilers.

"The American Boilermakers' Association's records of their meetings show that for 25 years they have attempted to get a standard specification which they hoped to be able to introduce and have passed in the various States. The National Tubular Boiler Association has been working with the same end in view for five years, but due to the fact that these associations have been unable to impress upon the public at large and upon State officials in particular the necessity of such legislation, they have been able to accomplish very little; but in the last year, in conjunction with the American

Society of Mechanical Engineers, wonderful strides have been made. The American Society of Mechanical Engineers is the foremost mechanical organization in the United States. Some time ago they became interested in this subject and appointed a committee to draw up a standard specification and a standard code of boiler construction that would make the best boiler and eliminate, as far as human endeavor can eliminate, the chances of explosions, with the attending disastrous results. The committee gathered data from corresponding societies and organizations throughout the world. They examined very carefully the rules for the construction of boilers and all legislation that had been passed on the subject. They called in council with them the foremost boiler manufacturers in the United States, together with the foremost boiler insurance companies, and got the benefit of the insurance companies' experience and consultation with the heads of all departments of insurance companies, and particularly with the inspectors and field men.

"They then published these rules and circulated them broadcast throughout the world and got the world's best criticisms on them, calling in consultation all the factors above mentioned.

"They have now revised their rules and will have them ready for publication in the very near future.

"It seems to me that the Commonwealth of Pennsylvania cannot better serve its citizens on the subject of safety and on any mechanical sciences than by adopting the rules which have resulted from the work of the American Society of Mechanical Engineers and the combination of people which they have called to their assistance."

What is true of Pennsylvania is true of every State and city in the United States not having boiler inspection laws and uniform specifications for boilers.

Municipal Shale Brick Co.

The Municipal Shale Brick Co., Martinsburg, W. Va., will be incorporated with \$250,000 capital stock for manufacturing building bricks, vitrified fireproofing, vitrified paving blocks, etc. Baltimore and Pennsylvania manufacturers will organize this enterprise, and A. B. Noll of Martinsburg is now in charge. Nearly \$200,000 is the estimated final cost of buildings and equipment, and the immediate expenditure will be about \$75,000. It is planned to erect low-priced buildings at first and then for the company to manufacture its own materials for construction according to the original plans, steel and fireproofing throughout. Electric power will be used.

The report of the Bank Commissioner of Arkansas shows that during 1914 there were 12 banks, with total capital of \$500,000 and surplus of \$39,000, established in that State. There were 28 banks which increased the amount of their stock, the total increase being \$430,000. In the case of 18 other banks a total decrease in stock was noted in the amount of \$637,500. The net increase of stock for all was \$332,000. It is said that the work of the State Banking Department has been constructive, and has resulted to the advantage of the banks and the public.

Recording the History of Southern Development Construction Activities Throughout this Section

By A. C. VANDEVER.

That almost 60,000 items relating to Southern industrial, railroad, financial and building operations and general business interests were published during 1914 by the Construction Department of the MANUFACTURERS RECORD is practically a duplication of the statement made one year ago concerning the summary for 1913. That the 1914 total of items (exactly 59,202) falls but 270 short of the number published in 1913 is in itself a gratifying illustration of the fact that, in the main, the work of Southern industrial development is going on despite temporary disarrangements and the depression, uncertainties and lack of confidence of the last few months.

For more than 30 years the MANUFACTURERS RECORD and for nearly 25 years our Daily Bulletin have been publishing, in a special department, this briefly-detailed information regarding the conception, progress and consummation of Southern industrial developments, railroad and financial operations, building works, etc.; thus endeavoring to live up to a statement made in these pages on January 5, 1884, which announced that arrangements had been made to

"Publish, every week, a list of every new factory, of whatever kind, projected anywhere in the South, every railroad undertaken and every mining company organized."

That statement further said:

"This fresh information will enable manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased."

This fact grows more and more patent with the advancing size of our Construction and Machinery, Proposals and Supplies Wanted Departments, and in recognition of which, as the years have gone on, many subscribers and readers have sent us grateful acknowledgment, usually specifying as to what needs of theirs had been presented and satisfactorily met.

The above-quoted announcement was written not so many years after the war's desolating hand had fallen so heavily upon Southern interests, and while yet those in the South who would bravely establish such things as factories and railroads had to force their enterprises up through a mass of hindering impediments before they could even attain proper surfaces upon which to make good foundations and build their structures of progressive business and living interests. Then the MANUFACTURERS RECORD dared to assume that it could hear of and publish "every" such enterprise. Under the changed conditions, and the knowledge of how widespread and intricately connected, as well as remotely isolated, many such projects and developments have come to be, we have grown modest, and have assumed, and many times averred, that we "endeavor" to give "all" such news. The endeavor and its results, as shown daily in the Daily Bulletin and weekly in the MANUFACTURERS RECORD, are the product of the constant and best work of a large trained force and the sending out and receiving of very many thousands of letters and telegrams annually; no expense, time or effort being spared that could in anywise add to the desirability, accuracy and fullness of this information.

The Construction Department of January 5, 1884, contained just 30 items, but these 30 items comprised tersely-written statements upon new projects so varied as to include coal mining, cooperage, railway construction (railroad and street), foundry and machine shop, bricks, town development, iron furnace, sash factory, electric enterprise, burning of sawmill, installation of flour mill, electrical appliances, ice factory, cotton compresses and gins, mining, grain elevator, hosiery mill, sash, door and blind factory, iron works and harbor and dock improvements—these all interestingly itemized, though not with the directness of our present system, with the Construction Department work so well arranged for quick reference, so appropriately divided under its State and City headings and its various distinguishing characteristics as to kinds of developments.

For some months after the beginning as a special division, the Construction Department's weekly an-

nouncements continued to cover about one page of the MANUFACTURERS RECORD. In this August 2, 1884, issue for the week there were 75 items on buildings and industries, and by November 22 of the same year the Construction Department actually toppled over onto the second page, with a total of 106 items. The list of burned and damaged buildings formed the toppling over portion, but, as we have previously said, "these burned items in our pages, which, at first careless glance, seem to be of the destructive rather than of the constructive order, are of quite equal importance to the items of progress, for, mainly, the idea of rebuilding, the reconstruction of destroyed plants and refurnishing of machinery is included, and later developed."

The first resume of a year's Southern progress, as noted by the work of this department, appeared in the MANUFACTURERS RECORD of January 10, 1885, the list aggregating 1865 new enterprises and involving approximately \$105,000,000 capital stock. By States, these were divided as follows: Alabama, 187 enterprises; Arkansas, 46; Florida, 95; Georgia, 196; Kentucky, 137; Louisiana, 53; Maryland, 105; Mississippi, 40; North Carolina, 226; South Carolina, 53; Tennessee, 250; Texas, 212; Virginia, 188; West Virginia, 77. The list included cotton and woolen mills, blast furnaces, ice factories, machine shops and foundries, planing and saw mills, building material, furniture, carriage, wagon and handle factories, flour mills, tobacco factories, cottonseed-oil mills, mining of gold, silver, copper, mica, iron, coal, etc.

Progress was marked and gains gradual, along lines of industries and buildings, until 1887. This year was one of most wonderful industrial activity in the South—a turning-point in achievements, as measured by diversified enterprises established or organized. During the first half of the year the MANUFACTURERS RECORD was able to note 1885 new enterprises, as against 812 noted for the corresponding first half of the previous year, 1886, while the record for the entire year was such as to warrant the assertion that more was accomplished during 1887 for the prosperity and progress of the South than ever before in the same length of time. An awakening year, during which the MANUFACTURERS RECORD had noted, in these brief, clear statements, a total of 3430 newly-organized or established enterprises, including a number of iron furnaces, the establishment of such furnaces being a notable part of this year's construction.

Late in this year—in July, 1887—the Machinery, Proposals and Supplies Wanted division was begun as a separate column, this number of the MANUFACTURERS RECORD containing three whole items; but these three were comprehensive, and might have been termed "watered stock," for they comprised an ice machine, an engine and a steamboat.

The number of items for the year 1888 showed a steady increase over 1887, this increased number also containing mention of many enterprises which had been noted in the previous year as to be established, and in 1888 were under progress or being completed. Now (in 1915), as then, it is the case that often we make mention of the same project twice, thrice, or many times, as from date to date we are advised of plans, progress or needs.

What is now our large "Building News" division was commenced as "Building Notes" in MANUFACTURERS RECORD, March 2, 1889, and occupied two columns in this number, the items under "Machinery Wanted" occupying three columns, while "Industrial Developments" and a few fire-damage notices covered four pages.

In April, 1889, under "New Southern Banks," the forerunner of our present Financial Department was begun as a division by itself, and also in September of this same year the published data concerning railroad matters was formed into a division, under the name of "Railroad Construction."

By 1890—January 4 number—in the MANUFACTUR-

ERS RECORD (which had then grown into a book of 68 pages) was noted for the week a total of 392 items, under the various by-this-time-settled headings of "Railroad Construction," "Southern Financial News," "Construction Department" (since called "Industrial Development"), "Building Notes" and "Machinery, Proposals and Supplies Wanted."

From the above-mentioned dates, on to the present time, the work of the combined divisions of the Construction Department has shown a steady increase and progress along every line of human endeavor and development taking place in the South. With fluctuations of capital, scares and uncertainties on account of political and governmental changes and trade issues, the number of enterprises to be chronicled and the manner of noting them has also necessarily varied; but steady has been the general increase, until for the past three years or more we have been averaging over 59,000 items annually. During the 30 years of the Construction Department's existence it has published about 1,000,000 of these tersely-written information-giving statements. Not every one has been of value; some have been incorrectly reported to us, and later we have issued corrective statements. But the incorrectly reported and valueless items have been almost infinitesimally few in comparison with the vast host of statements giving correct information relative to the South's resources, its manufactures, building operations, financial and railroad matters, and all other of its varied business interests.

No estimate can possibly be made of the value to the South and to the whole country of these hundreds of thousands of brief items covering this 30-year period. They have called forth millions of letters, for individual items often result in a hundred or more letters; they have made tens of thousands of people in the North and West study the South as reflected in this moving panorama of activity, and they have quickened the thought of millions in the South who in the MANUFACTURERS RECORD and in the daily papers which weekly republish a summary of this news have watched the utilization of the resources of their section. They have brought immense amounts of capital to be invested in the South. Likewise, they have been the means of turning Southern capital into active investment in industrial pursuits. They have helped to locate many factories, large and small. They have implied the need of and made requests for an untold amount of native and manufactured material. They have aided the development of towns and cities. They have suggested railroad and highway construction, which now form or are becoming parts of "great arteries of travel." They have gone on their printed round, giving information alike to those concerned in the paving of a few blocks of street or to those interested in the equipment of a great plant or the development of a water-power.

Boundless is the array of possibilities presented by these many pages concerning industrial development, buildings, railway and financial operations, etc., which are published daily in the Daily Bulletin and weekly in the MANUFACTURERS RECORD. We thank all who have in the past helped in this presentation by accepting our invitation to furnish accurate advices concerning new projects; also those who have responded to telegraphed or written requests for verification and further information relative to reported establishments; and we go on, endeavoring and hoping to increase in every way the efficiency of this department, which we know to be so invaluable to the furtherance of the South's upbuilding and to bringing all sections into closer business relations.

Not an architect or engineer but may here find innumerable helps to his work; not a capitalist is there in the country whose interests are not directly or indirectly affected by these presentations; nor a manufacturer whose business is not identified with these products or materials. We dig some of our items from the mines, and the mining prospector and the investor are

interested; we find some in the forest trees, and the lumber manufacturer is concerned; we take some others from the clouds, and the water-courses and electrical and water-power developments follow; we describe the erection of homes, churches, courthouses, hotels and great warehouses, and the men who furnish building plans and materials, as well as those who put the materials together, are here demanded. We might go on with the list, but these may suggest enough. There is simply no limit to the possibilities presented by such information as is given in the Construction pages of the MANUFACTURERS RECORD—this part of the "meeting-place for buyer and seller, for maker and user."

Continuing on with the latter thought—that "meeting-place for buyer and seller" is surely partly within the confines of our Machinery, Proposals and Supplies Wanted columns, where, from almost every country on the globe, though mainly from our Southern readers and business people, constantly come specific requests for all kinds of materials and machinery, both ordinary and uncommon, bids for government, state, county and municipal betterments, proposals from manufacturers for the making of patented or special articles of all kinds, and the furnishing of supplies of every description. During the past few months, with the shutting down of many foreign manufactories and deliveries of goods, a marked increase of requests relative to representation of American products abroad has followed. Including all home and foreign wants, the MANUFACTURERS RECORD published over 7000 items during 1914 in its Machinery, Proposals and Supplies Wanted columns.

Below, under their various appropriate headings, we append the summary of items published during 1914 by the Construction Department. The table also shows the list for the month of December. Items for the preceding 11 months of 1914 were previously detailed. The table follows:

	Totals December, for year.	
Industrial and Developmental.		
Bridges, Culverts, Viaducts.....	69	1,111
Canning and Packing Plants.....	18	263
Clayworking Plants.....	19	173
Coal Mines and Coke Ovens.....	37	413
Concrete and Cement Plants.....	8	59
Cotton Compresses and Gins.....	9	344
Cottonseed-oil Mills.....	3	153
Drainage Systems.....	25	277
Electric Plants.....	78	1,274
Fertilizer Factories.....	9	165
Flour, Feed and Meal Mills.....	38	336
Foundry and Machine Plants.....	29	421
Gas and Oil Enterprises.....	78	1,393
Ice and Cold-storage Plants.....	48	690
Iron and Steel Plants.....	1	24
Irrigation Systems.....	2	45
Land Developments.....	46	810
Lumber Manufacturing.....	64	747
Metal-working Plants.....	10	85
Mining.....	37	423
Miscellaneous Construction.....	46	644
Miscellaneous Enterprises.....	50	1,276
Miscellaneous Factories.....	129	2,055
Motors and Garages.....	35	511
Railway Shops, Terminals, Roundhouses, etc.	7	97
Road and Street Work.....	190	2,958
Sewer Construction.....	58	1,070
Telephone Systems.....	15	298
Textile Mills.....	21	385
Water-power Developments.....	10	147
Water-works.....	107	1,331
Woodworking Plants.....	39	526
Buildings.		
Apartment-houses.....	71	1,457
Association and Fraternal.....	19	496
Bank and Office.....	43	1,115
Churches.....	70	1,362
City and County.....	58	884
Courthouses.....	11	280
Dwellings.....	323	5,766
Government and State.....	27	618
Hotels.....	44	674
Miscellaneous.....	77	1,956
Railway Stations, Sheds, etc.....	19	357
Schools.....	121	2,791
Stores.....	168	2,940
Theaters.....	30	402
Warehouses.....	45	1,092
Railroad Construction.		
Railways.....	90	1,281
Street Railways.....	9	261
Financial		
Corporations.....	134	1,581
New Securities.....	307	4,745
Fire Damage.....	3,030	49,452
Machinery, Proposals and Supplies Wanted.....	398	2,707
	577	7,043
Totals.....	4,005	59,202

The Gadsden Board of Trade of Quincy, Fla., is circulating a pamphlet telling of the opportunities for diversified farming in Gadsden county.

Shipyards on Baltimore's harbor built 32 vessels in 1914, having an aggregate value of \$3,450,400 and an aggregate tonnage of 39,451.

Bank Merger at Memphis.

The Mercantile National Bank of Memphis, Tenn., has absorbed the Citizens' Bank & Trust Co. of that city, according to an announcement just made there. Jo. L. Hutton, president of the Mercantile National, is reported saying that it will assume all depositors' liabilities and will take over all assets of the absorbed bank which are deemed good. It is also stated that it was in splendid financial condition and owed nothing. The merger was the result of an opinion and agreement that it would be profitable to all parties concerned. The Citizens' Bank & Trust Co. was organized in 1912; capital, \$50,000; surplus, \$25,000; undivided profits, \$6,000; deposits, \$320,000; loans, \$275,000. J. H. Creath is president; Wm. Pritchard and M. G. Buckingham, vice-presidents, and W. R. Cross, cashier. The Mercantile National was organized in 1914. Capital is \$500,000; deposits, \$1,500,000; loans, \$1,300,000. Jo. L. Hutton is president; J. F. Hunter and J. C. Ottinger, vice-presidents, and J. D. McDowell, cashier. It is further said that there will not be any changes in its official staff.

Savings Bank of Baltimore.

The annual report of the Savings Bank of Baltimore makes an exceedingly gratifying showing because its funds on hand December 31 had increased more than \$500,000 during the year 1914, making them total \$36,912,734. A year ago they were \$36,408,438. The amount received from depositors during the year was \$7,577,673, and there was also received from interest and dividends on stocks, bonds, etc., \$1,763,888. There was paid to depositors \$8,208,147, besides expenses, taxes, etc. The total assets of the bank, which are represented by the funds on hand, consist of bonds and stocks, \$32,909,245; loans on mortgages, \$2,802,668; cash, \$826,239, and other items. The amount due depositors is \$34,317,640, guarantee fund \$1,900,000 and undivided surplus, which is chargeable with nine months' accrued interest on deposits, is \$695,094. The number of accounts is 53,997, a net decrease of 367 for the year. W. H. Conkling is president, and F. A. Hoffman, treasurer.

German Savings Bank Report.

The annual report of the German Savings Bank of Baltimore at the close of business December 31 shows that a year ago the funds on hand were \$4,772,760, and there was received from depositors during the year 1914 the sum of \$2,190,952, and from interest and dividends \$233,795. There was paid depositors during the year \$2,233,852, besides other items of taxes, expenses, etc., and the funds on hand December 31, 1914, were \$4,885,351, which are the total assets of the bank, the principal item being investments in bonds and stocks, \$3,453,905. There are also loans on collateral, \$258,270, and loans on mortgages, \$919,183. Cash amounts to \$176,439. The number of accounts is 8148, a net decrease of 58 during the year. Charles Spilman is president and William Spilman treasurer.

Other Bank Statements.

The National Exchange Bank of Baltimore has issued a statement of its condition as of December 31, 1914, showing total resources of \$7,854,278, which includes loans and discounts, \$4,395,358; United States bonds, \$1,086,500; cash and due from reserve agents, \$1,269,583, and other items. Deposits are \$4,061,025; capital stock, \$1,000,000; surplus and undivided profits, \$735,281. Waldo Newcomer is president; Summerfield Baldwin, vice-president, and R. Vinton Lonsdale, cashier.

The First National Bank of Baltimore reports as of December 31, 1914, total resources of \$9,410,847, which includes loans and discounts, \$4,409,913; United States bonds to secure circulation, \$698,500; to secure United States deposits, \$137,500; bonds, securities, etc., \$554,218; due from Federal Reserve bank, \$158,956; from approved reserve agents, \$731,962; from banks and bankers, \$966,681; lawful money reserve in bank, \$398,300; exchanges for clearing-house, \$496,590; notes of other national banks, \$233,595, and other items. Deposits are \$7,275,451; capital stock paid in, \$1,000,000; sur-

plus fund, \$350,000; undivided profits, less expenses and taxes, \$50,053. H. B. Wilcox is president; Blanchard Randall, vice-president; Wm. S. Hammond, cashier.

The First National Bank of Richmond, Va., has issued its statement at the close of business December 31, 1914. Total resources are \$19,017,615, including loans and discounts, \$12,757,388; United States bonds, \$1,895,700; other stock and bonds, \$715,774; cash and due from banks, \$3,568,964. Total deposits are \$12,792,188; capital, \$2,000,000; surplus, \$1,000,000; undivided profits, \$136,371, etc. John B. Purcell is president; John M. Miller, Jr., vice-president; W. M. Addison, cashier.

The First National Bank of Birmingham, Ala., reports December 31 loans and discounts, \$9,744,142; total cash, \$3,221,743; capital stock, \$1,500,000; surplus and profits, \$1,657,493; circulation, \$2,268,050; dividends unpaid, \$15,000; total deposits, \$10,450,861; total resources, \$16,918,404. J. H. Barr is president; J. H. Woodward, vice-president; Thomas Hopkins, cashier.

American Bank Reporter.

The desk edition of the American Bank Reporter for December is issued. This handy reference book, which contains approximately 3000 pages, is especially valuable to all who have relations with financial institutions. The order in which contents are arranged renders it easy for the reader to find quickly the information he seeks. Although the book contains such a mass of valuable data, its size is kept down by the use of thin but strong paper, so that it easily fits in a pigeon hole of a desk. It is bound in red cloth, with gold lettering, and is published by the Steurer Publishing Co., 5 Beekman street, New York.

American Wood Preservers.

The American Wood Preservers' Association will hold its eleventh annual convention at Chicago, Ill., January 19-21. George E. Rex is president, and F. J. Angier is secretary-treasurer. The program will include papers on:

"Economical Use of Steam in Connection with Wood-Preserving Plants," by A. M. Lockett.

"Temperature Changes in Wood Under Treatment," by George M. Hunt.

"A Specification for a Coal Tar Creosote Solution," by Herman von Schrenk and Alfred L. Kammerer.

"The Comparative Toxicity of Coal Tar Creosote and Creosote Distillates and of Individual Constituents for the Marine Wood Borer, *Xylotrya*," by L. F. Shackell, M.D.

"A Method for Finding the Annual Charges for Ties," by Harrington Emerson and T. T. Bower.

"The Mechanical Life of Ties as Affected by Ballast," by E. Stimson.

"Additional Facts on Treated Ties," by J. H. Waterman.

"Air Seasoning of Crossties," by A. H. Noyes.

"Sill Ties," by F. J. Angier.

"Final Inspection of Ties and Timber," by C. M. Taylor.

"A Voice from the Pacific Coast," by H. E. Horrocks.

"Treated Timber for Factory Construction," by F. J. Hoxie.

"Destruction of Timber by Marine Borers," by E. S. Christian.

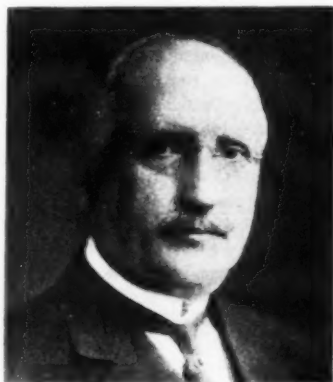
"The Bleeding and Swelling of Paving Blocks," by Clyde H. Teesdale.

"Laboratory Analysis After Treatment vs. Actual Record During Treatment of Creosoted Wood Paving Blocks," by Frank W. Cherrington.

President George E. Rex will make his annual address, and reports of standing committees will be made by H. M. Rollins, J. H. Waterman, Ernest Bateman, Clyde H. Teesdale and A. E. Larkin. Secretary F. J. Angier will make his report.

H. N. Pollard has addressed the City Council of St. Joseph, Mo., proposing to put in operation a motor omnibus line there with a five-cent fare, provided that a five-year franchise for its operation is granted.

LEADING MEMBERS OF THE NATIONAL FOREIGN TRADE COUNCIL



ALVA B. JOHNSON.



JOHN F. FITZGERALD.



E. A. S. CLARKE.



ROBERT DOLLAR.



C. M. MUCHNIC.



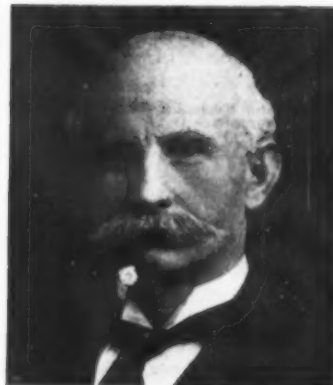
JAMES A. FARRELL, Chairman.



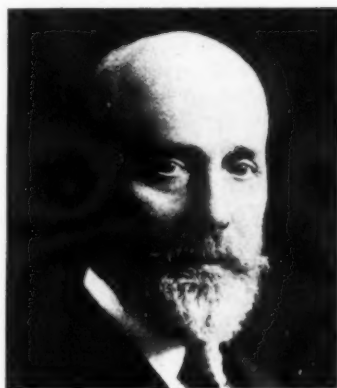
CHAS. A. SCHIEREN.



SAMUEL P. COLT.



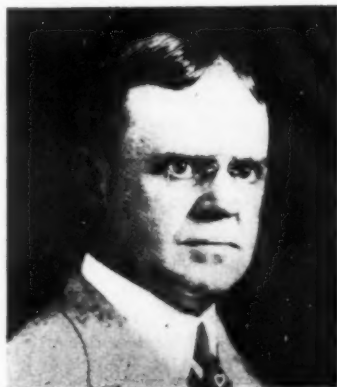
MAURICE COSTER.



WELDING RING.



WILLIAM PIGOTT.



SAM D. CAPEN.



E. P. THOMAS.



WILLARD STRAIGHT.



W. L. SAUNDERS.

NATIONAL FOREIGN TRADE COUNCIL CONVENTION.

Discussion from a national standpoint of problems of the foreign trade of the United States is to dominate the convention at St. Louis January 21-22 called by the National Foreign Trade Council, with headquarters at New York, a body created by the National Foreign Trade Convention, held at Washington in May, 1914. Secretary of Commerce W. C. Redfield will make the opening address at the St. Louis convention after addresses of welcome by the Mayor of St. Louis and President Samuel D. Capen of the St. Louis Business Men's League. Secretary Redfield will be followed by the chairman of the foreign trade council, James A. Farrell, president of the United States Steel Corporation. The formal papers and the discussions turning upon them will bear directly upon the purpose set forth in the call for the convention as follows:

"The European war has demonstrated that our foreign trade, while small in comparison with domestic business, is a vital element in our national prosperity and therefore of immediate concern to every citizen. Individual action, however strong, cannot do justice to present opportunities for its expansion. Co-ordinate effort of the entire nation—manufacturers, merchants, bankers, carriers and all others working together in harmony, with a well-defined national policy—will alone enable us to develop the possibilities which are now before us."

The papers to be presented are as follows:

"Problems Arising in War and Commerce," by John Bassett Moore; discussion by D. W. Kempner, Galveston (Tex.) Cotton Exchange; Henry Howard, vice-pres-

ident Merrimac Chemical Company, Boston, Mass.
 "Foreign Banking, Loans and Credits," discussion by Benjamin Joy, Shawmut National Bank, Boston, Mass.; Louis S. Goldstein, New Orleans, La.; Murray Carleton, St. Louis, Mo.

"Government Regulation of Commerce as Affecting Foreign Trade," by W. L. Saunders, chairman of the board, Ingersoll-Rand Company, New York; discussion by John D. Ryan, president Amalgamated Copper Co.; Carman F. Randolph, New York.

"Problems of the Smaller Manufacturer and Merchant in the Development of Foreign Trade," by William C. Downs, United States commercial attache for Australasia; discussion by C. D. Mitchell, president Chattanooga Plow Co., Chattanooga, Tenn.; H. C. Lewis, National Paper & Type Co., New York.

"Commercial Education for Foreign Trade," by Prof. Edwin F. Gay, dean of Graduate School of Business Administration, Harvard University; discussion by Prof. J. W. Jenks, School of Commerce, Accounts and Finance, New York University, New York city; Prof. G. L. Swiggett, University of Tennessee, Knoxville, Tenn.; W. D. Simmons, president Simmons Hardware Co., St. Louis, Mo.

"Merchant Marine," by Welding Ring of Mailler & Quereau, New York.

In addition to the general sessions will be held group sessions, each devoted to a specific trade question under the general subjects, "Problems Arising in Foreign Trade," "Foreign Banking, Loans and Credits," "Government Regulation of Commerce as Affecting Foreign Trade," "Problems of the Smaller Manufacturer and Merchant in Developing Foreign Trade," "Commercial Education for Foreign Trade," and "Merchant Marine."

On the evening of January 21 the banquet will be held, with Alba B. Johnson, president of the Baldwin Locomotive Works of Philadelphia, as toastmaster.

James A. Farrell, chairman, president United States Steel Corporation, New York.

John J. Arnold, Chicago Association of Commerce.

Willis H. Booth, Los Angeles, Cal.

Sam D. Capen, president Business Men's League, St. Louis.

J. A. G. Carson, vice-president Board of Trade, Savannah, Ga.

Walter L. Clark, vice-president Miles-Bement-Pond Company, New York.

E. A. S. Clarke, president Lackawanna Steel Co., New York.

Samuel P. Colt, president United States Rubber Co., Providence, R. I.

Maurice Coster, Westinghouse Electric & Manufacturing Co., New York.

F. G. Crowell, Kansas City, Mo.

Robert Dollar, president Robert Dollar Steamship Co., San Francisco.

John J. Donovan, Chamber of Commerce, Bellingham, Wash.

John M. Fitzgerald, Chamber of Commerce, Boston, Mass.

J. Rogers Flannery, Pittsburgh, Pa.

P. A. S. Franklin, vice-president International Mercantile Marine, New York.

L. S. Goldstein, Association of Commerce, New Orleans.

Lloyd C. Griscom, New York.

Fairfax Harrison, president Southern Railway, Washington, D. C.

H. G. Herget, president Illinois Manufacturers' Association, Chicago.

James J. Hill, chairman of the board, Great Northern Railway, St. Paul, Minn.

Henry Howard, Boston, Mass.

Edward M. Hurley, president Hurley Machine Co., Chicago.

Charles E. Jennings, president American Manufacturers' Export Association, New York.

Alba B. Johnson, president Baldwin Locomotive Works, Philadelphia.

D. W. Kempner, Cotton Exchange, Galveston, Tex.

Cyrus H. McCormick, president International Harvester Corporation, Chicago.

J. R. McWane, Birmingham, Ala.

Barton Myers, Chamber of Commerce, Norfolk, Va.

Charles M. Muchnic, American Locomotive Co., New York.

C. D. Mitchell, Chattanooga, Tenn.

M. A. Oudin, General Electric Co., Schenectady, N. Y.

William Pigott, president Seattle Car & Foundry Co.

and vice-president Pacific Coast Steel Co., Seattle, Wash.
 Welding Ring, New York Produce Exchange, New York.

John D. Ryan, president Amalgamated Copper Co., New York.

William H. Russe, Memphis, Tenn.

W. L. Saunders, president Ingersoll-Rand Company, New York.

Charles A. Schieren, Jr., president Charles A. Schieren Company, New York.

W. B. Simmons, president Simmons Hardware Co., St. Louis, Mo.

Willard Straight, president American Asiatic Association, New York.

G. F. Sulzberger, Chicago.

Stewart K. Taylor, Chamber of Commerce, Mobile, Ala.

E. P. Thomas, president United States Steel Products Co., New York.

F. A. Vanderlip, president National City Bank, New York.

Jere H. Wheelwright, president Consolidation Coal Co., Baltimore.

Theodore B. Wilcox, Portland, Ore.

Robert H. Patchin, secretary, New York.

The St. Louis committee on arrangements includes Sam D. Capen, chairman; Phil. A. Becker, E. H. Bochen, F. H. Britton, A. C. Brown, G. W. Brown, August A. Busch, B. F. Bush, J. B. Chambers, Allen W. Clark, F. Ernest Cramer, Forrest Ferguson, Edward M. Flesh, Philip B. Fouke, D. R. Francis, F. D. Gardner, Marshall Hall, E. W. Handlan, Oscar Herf, Edward Hidden, Walker Hill, Clarence H. Howard, Jackson Johnson, A. B. Lambert, E. P. Lampkin, W. A. Layman, W. H. Lee, F. W. Lehmann, Edward Mallinckrodt, Charles R. Meston, Henry Miller, Hon. Charles Nagel, W. C. Nixon, D. C. Nugent, J. A. Ockerson, J. F. O'Neil, Geo. T. Parker, Robert H. Patchin, H. W. Peters, Samuel S. Pingree, Tom Randolph, Frank A. Ruf, W. F. Saunders, Carl H. Schlapp, Julius J. Schotten, Frank J. Semple, A. L. Shapleigh, M. Shoenberg, Wallace D. Simmons, J. M. Sloan, James E. Smith, Charles A. Stix, E. W. Stix, R. H. Stockton, Charles Sutter, E. D. Tilton, J. A. Troy, T. W. Van, Festus J. Wade, M. B. Wallace, F. O. Watts, Chas. F. Wenneker, A. J. Wertheimer, Edwards Whitaker, Chas. Whitelaw, Henry L. Whitman, Melville L. Wilkinson.

SOUTHERN PACIFIC GRAIN ELEVATOR.

Contracted for \$500,000 Structure and Will Order Extensive Equipment.

Plans have been accepted and contract awarded to James Stewart & Co., Houston and St. Louis, for the structures of the Southern Pacific Terminal Co.'s grain elevator to replace its plant recently burned at Galveston. This contract provides for concrete fireproof construction costing about \$500,000 and a total capacity of 1,003,000 bushels of grain. It may be concisely stated as follows: Forty-eight tanks, partially independent of each other, capacity 674,000 bushels; each tank 98 feet high by 15½ feet in diameter; 35 interstice tanks (between larger tanks), with capacity of 117,500 bushels; 22 bins (forming part of workhouse), with capacity of 212,100 bushels; 98x48-foot workhouse; 96x74-foot track shed, with four tracks. The foundations are being built by the Southern Pacific Terminal Co. under the direction of H. F. Jones, construction engineer, requiring 4500 pilings, each 40 feet long; on the latter will be laid a concrete slab composed of 15,000 yards of crushed rock, 14,000 wheelbarrows of cement and 6000 yards of sand. This elevator will handle 336 cars of grain in 24 hours. Its equipment will be ordered to include electric power, silent chain drives, telephone system, passenger elevators, automatic dust collectors, automatic sprinklers, sacklers, machine shovels, drays, electric signals, etc. The plant is expected to be ready for service by June 15.

Georgia State Manufacturers.

The Georgia State Manufacturers' Association, which will have headquarters at Atlanta, has effected temporary organization with H. A. Dean, vice-president of the Powers & Sullivan Manufacturing Co. of Rome, president; W. P. Stevens, general manager of H. Stevens Sons' Company of Macon, vice-president, and

Thomas K. Glenn, president of the Atlanta Steel Co., treasurer. The organizers of the association, the purposes of which are to encourage the use of home materials in home manufacturing and the sale of home products in home markets, to minimize trade abuses, to secure just and equitable laws and equitable adjustments of freight rates and classifications and to disseminate industrial information, are Fred B. Gordon, president Columbus Manufacturing Co., Columbus; Oscar Elsas, president Fulton Bag & Cotton Mill, Atlanta; H. P. Meikelham, agent Massachusetts mills in Georgia, Lindale; J. B. Sullivan, president Towers & Sullivan Manufacturing Co., Rome; M. F. Cole, president R. D. Cole Manufacturing Co., Newnan; William Kehoe, president Kehoe Iron Works, Savannah; George R. Lombard, president Lombard Iron Works, Augusta; Julius Gresham, president Gresham Manufacturing Co., Griffin; S. L. Dickey, sales manager Dodge Manufacturing Co., Atlanta; H. A. Dean, vice-president Towers & Sullivan Manufacturing Co., Rome; W. P. Stevens, general manager H. Stevens' Sons Company, Macon; Thomas K. Glenn, president Atlanta Steel Co., Atlanta.

Chattanooga Stamping & Enameling Co.

The Chattanooga Stamping & Enameling Co., Chattanooga, Tenn., whose plans were recently outlined, has been incorporated with a capital stock of \$200,000 by Wm. Lipphardt (president), J. T. Arnold, James M. Trimble, C. H. Huston and Francis Martin. W. H. Sears, Chattanooga, has prepared plans and specifications for constructing the plant, and the first building will be 300 feet long by 100 feet wide, one story high, of brick and concrete, with steel sash, fire sprinklers, etc. He has been ordered to prepare plans for three wings to be constructed later. The initial building contract, amounting to between \$75,000 and \$100,000, has been awarded to Mark K. Wilson of Chattanooga. A site fronting 450 feet on the Tennessee River has been secured and the plant will be equipped for manufacturing enameled sheet steel and iron products. Electricity for power will be obtained from the transmission system of the Tennessee Power Co.

Compress and Warehouse Plant Completed.

At a cost of about \$500,000, the Merchants & Planters' Compress & Warehouse Co., Galveston, has completed its plant (contracted for last June), with a warehouse capacity of 100,000 bales of cotton and a compressing capacity of 25,000 bales per season. The new facilities include 28 separate storage compartments, each 100x80 feet, a compress building 500x100 feet, two loading and unloading platforms, each 600x50 feet; a cotton pickery, a boiler-room and an office. Electric trucks will be used for hauling cotton within the plant, and an electrical trolley system and a sprinkler system will be installed. Contract for erecting the plant was completed last week by the Gilsonite Construction Co. of St. Louis. J. R. Fordyce of Little Rock was the designing engineer. It is stated that the plant was designed to handle cotton for 10 years to come, but is now filled and the company is preparing to contract for 10 additional sheds for cotton storage to cover an area of 300x280 feet.

For a Large Steel Plant.

The International High Speed Steel Co., New York, has acquired nine acres of land at Franklin, near Rockaway, N. J., on which it will build a large plant for manufacturing its steels. These include the company's "Bulldog" brand of hollow and solid mining drill steel in all sections, shapes and sizes, also high-speed tool and automobile steels of every description. This plant is expected to be in operation by April and will provide employment for several hundred men.

Wants to Secure Gas Plant.

Chamber of Commerce,
 Burlington, N. C., January 11.

Editor Manufacturers Record:

I am trying to lay a plan to get a gas plant for our city, and would like to get in touch with parties who might be interested in a franchise. Could you put me in touch with them? R. F. WILLIAMS, Secretary.

Great Potentialities of the South for Chemical Industries

By DR. DAVID T. DAY.

In an active connection of more than thirty years with the United States Geological Survey Dr. David T. Day touched, directly or indirectly, practically all of the activities of that governmental agency. Indeed, to the intelligent and far-seeing energy of Dr. Day is largely due the important position occupied by the Survey in its intensely practical work for the whole country. No man ever had better opportunity than he to become thoroughly familiar with the mineral resources of the United States and no man is better qualified to set forth clearly the wonderful industrial potentialities in such resources. In order to engage in the private practice of his profession Dr. Day recently retired from the Survey. Readers of the MANUFACTURERS RECORD have long been acquainted with the high character of his writing. They will, therefore, be prepared to appreciate the value of the suggestions he makes in the accompanying article as to the possibilities in the South for the chemical industries.—EDITOR MANUFACTURERS RECORD.]

The attention of the manufacturing chemists of the United States has frequently been called in this journal to the natural mineral resources in the South which are particularly available for the manufacture of chemical products. Without going into detail in a review of these natural advantages, one thinks instantly of the close association of very large quantities of sulphur and salt in Southern Louisiana and Texas. Thanks to the genius of Herman Frasch, a method was found for obtaining this sulphur in a particularly pure condition free from all disadvantageous elements, such as arsenic and antimony, which frequently contaminate the supplies of other countries. Salt occurs almost chemically pure in the celebrated mines of Avery's Island, Petite Anse, and elsewhere in Southern Louisiana; also in the vicinity of these two essential elements for the manufacture of any chemical is, of course, the cheap fuel oil characteristic of the Gulf coast, and this fuel oil is also able to furnish the raw materials for aniline dyes and for many other chemical products in large amounts at low prices. Again, near the center of the State of Louisiana at Pine Prairie, sulphur, salt, petroleum and gypsum all occur in considerable quantities within a few hundred feet of each other, and also within a mile or two of a railroad. To be sure, as a competitor in the oil business, the amount of oil has proved too small, but as a basis for the chemical manufacture of organic compounds it is abundant. The sulphur development close to large supplies of oil, and with abundant salt and salt brines in the neighborhood of Freeport, Tex., includes another ample base of supplies.

It is the present purpose to call attention to the necessity for native supplies of chemical products to take the place of the interrupted foreign sources of supply. Out of the imports in the year 1913, worth \$1,893,925,657, the Southern States could, if necessary, have furnished all the foodstuffs and food animals. These formed over 21 per cent. of the articles imported free in the last fiscal year, and about 31 per cent. of the materials on which duty was paid. Of the miscellaneous materials and materials used for manufactures, the greater part could have been furnished by the Southern States.

By looking over the mineral contributions to the articles manufactured and partly manufactured, it seems that the South could have furnished all of the asbestos, of which \$2,000,000 was imported; all the asphalt, which amounted to \$1,000,000, and, in so far as raw materials are concerned, all of the coal-tar distillates, materials for the coal-tar preparations, and products which amounted to over \$12,000,000; the imports of arsenic, amounting to \$178,388; ammonia amounting to over \$5,000,000; synthetic indigo, etc., amounting to \$1,000,000; bleaching powder, amounting to nearly \$500,000; nitrate of soda and other soda salts, amounting to \$18,500,000, if the plant in South Carolina for making nitrates from atmospheric nitrogen were sufficiently developed; sulphur, which, in spite of the American product, was imported to the extent of \$750,000; mineral wax amounting to \$500,000, and many others of the \$14,000,000 worth of chemicals not mentioned here. The total imports of drugs, chemicals, dyes, etc., amounted to \$94,519,912. Some of these must be furnished from native production during the next year. Most of them could be furnished to advantage by the Southern States. In spite of the well-known and only partly-utilized deposits of china clay, kaolin and other clays in Florida, Georgia and other localities, the United States imported \$2,246,807, and besides this, raw clay and clay products in the form of earthen, stone and chinaware, porcelain, parain, bisque, etc., was imported to the amount of \$10,500,000. As far as natural resources are concerned, this could all have been produced in the South.

A further list of such imported products is given in an article published by the Arthur Little Company,

chemical engineers, Boston, Mass. The article also gives a clear idea of the great difficulties that it is time we were facing in bringing these manufacturing plants into existence.

With all the product of copper from Ducktown, Tenn., and other localities, the United States nevertheless imported over \$40,000,000 of copper manufactures, besides ore, matte, etc., worth \$13,500,000. Seventy million dollars' worth of cotton manufactures were also imported.

Even in the line of fertilizers, it must not be supposed that the only articles furnished are those made from German potash salts. Over \$2,000,000 of bone dust, guano and other phosphatic fertilizers were imported, in spite of our abundant product of these articles.

Glassware, all of which could be advantageously produced in the Southern States on account of the abundance of natural gas, so essential to this industry, was imported to the amount of \$8,000,000. Even iron and steel products, only \$2,800,000 of which represented cutlery and such high-grade products, were imported to the extent of nearly \$32,000,000, and of this, most of the products were represented also in domestic manufacture, and there is every reason for believing that they could all have been made in this country. Manganese was imported to the extent of \$1,841,451. This was once a valuable product in Virginia, and, should the present conditions keep up, the reopening of the Virginia mines is an inevitable and fortunate result. Once reopened with modern improvements, the industry would doubtless persist. An important effect of the present conditions will undoubtedly be the replacing of the 1,611,207 pounds of mica imported from abroad, worth \$524,454. Then this much more material can now be supplied from the mines of North Carolina and elsewhere.

Nickel ore and matte was imported to the amount of \$8,000,000, and yet the United States is by no means limited to purchasing this material abroad, since the old mines in Pennsylvania and many known and reported occurrences of this metal through the Southern States can now be exploited to advantage.

It is interesting to note that of the mineral oils, over \$13,000,000 worth was imported, but this was chiefly crude oil from Mexico—a trade which has probably become permanent and which can be welcomed, inasmuch as there is a market for practically all the oil that can be produced of this fuel grade. The present conditions, too, must simply bring about a very greatly-increased use of fuel oil, and, with this use of petroleum once established and applied to the manufacturing of the east coast, a very much greater amount of oil will be demanded than ever has been sold for this purpose in the past. In fact, the market for crude oil at a moderate price is difficult to estimate except by recognizing that millions of tons of coal are consumed in the East for manufacturing purposes, and that by the use of internal combustion engines this coal can be largely replaced by oil, and the oil sold at a profit if the present condition of supply persists.

Twenty-four thousand eight hundred and sixty-eight tons of graphite, worth \$1,846,126, were imported, yet all of this material could have been made, and in very much purer condition, by the Acheson process here in the United States, with the cheap electric power available on the Atlantic coast or easily generated from cheap natural gas in the Southern interior States.

It is almost unthinkable that, with the abundance of salt in this country, any should be imported, but one-third of a million was spent for imported salt. In spite of cheap cottonseed oil and other fats for the manufacture of soap, nearly \$1,000,000 of soap was imported in 1914.

Two million three hundred and three thousand seven hundred and eighty-nine dollars' worth of stone, includ-

ing marbles—seldom any finer than those obtained at Knoxville, Tenn., or in Northern Georgia—slate, lithographic stone, whetstones, sandstones, granite, flint, cliffstones and burrstones are added to this total. Reference has already been made to the sulphur imported as such, but besides this, over \$13,500,000 worth of pyrites and other sulphur ores were imported. This material is found fairly plentiful in the Southern States, but must compete with the Louisiana pure sulphur also. Nearly \$40,000,000 worth of block tin was imported, while probably no tin at all was taken from the deposits of North and South Carolina, which, under the new conditions abroad brought about by the war, must become producing and profitable if developed with sufficient care.

In considering chemicals, drugs, dyes, etc., it is an unfortunate fact that by far the greater proportion of our chemical imports came from Germany, the great center for the manufacture of chemical products, and no matter how providentially soon the actual conditions of war are over, the rehabilitation of the chemical industry of Germany will require time, during which our industries would suffer to a very great extent were we not able to command resources of our own.

Austria-Hungary, France, Germany, Belgium and the United Kingdom furnish by far the greater part of all the earthen, stone and china ware imported, and the inability of these countries to do any more than look out for their own trade for a long time in the future throws us all the more on our own resources as to raw materials and for the manufacture of products from them.

A review of the total contributions of the South to the mineral wealth of the country will bear out the completeness with which the mineral resources of the South furnish independently of all other regions the supplies necessary for the South's development. But at this point let us also bear in mind a fact well known, but of considerable importance in this connection, and that is, that nowhere in the Union is there such an excess of production of minerals over the amount required at home.

The South's ability to produce minerals is limited by the opportunity to dispose of them. This in turn is, of course, limited by the distances to which the materials can be profitably shipped; so long as products are crude raw materials, the radius of profitable shipment is small. This radius increases with every dollar per ton in the value of the products shipped. Carry the manufacture of the raw material a step farther up the scale, and the distance to which it can be shipped increases. Now, against this possibility of disposing of even high-grade manufactured products, there has been continually offered the surplus products of other lands, not only of large and prosperous factories in the United States, but still more depressing in its effects, the products of foreign countries, where, to mechanical efficiency factories of enormous size and high-skilled manufacturers, is added the more important item of extremely cheap labor. It may be that this feature of cheap labor is misunderstood in statistical treatment, and while this item is the basis for future extended discussion, one feature must be borne in mind which is not understood at all in this country: The daily wage of the German laborer in the chemical factory, for example, is low, and his yield of useful results is assumed to be correspondingly less than that of the American laborer. Just a word to show that this is entirely misunderstood, and, in fact, is by no means true. A German laborer's wage is nowhere near his total compensation. If the average American manufacturer knew of the unusual development in the German laborer by aids other than money he would be amazed.

The efficiency of these laborers is increased by other

forms of encouragement to better work, such as prizes and bonuses. Further, they are encouraged by recreation grounds within the factory limits for themselves, their wives and their children; they are given facilities for all kinds of baths, well-lighted lunchrooms, where food is served either free or at a nominal cost, and every pains is taken to prevent any decrease in efficiency due to inhaling injurious dust or vapors. All possible forms of educational development are introduced by free lectures, moving-picture shows. The sick and injured are cared for in free hospitals by scientific experts. In case of the illness of the family, the worker's efficiency is not impaired by worry, for that member of the family is cared for by a band of nurses which is amply sufficient for all the cases of illness, and not simply a system in theory alone.

This system of aid in efficiency goes so far that when a young woman worker becomes engaged to be married she is given six months' education in housekeeping in all its branches, including marketing, cooking, sewing and general housework, with full pay for the six months previous to her marriage. This is not in any sense philanthropy, it is increasing the efficiency of a machine. It is no more philanthropy than the way in which the horses are cared for in a celebrated pickle factory in the United States; but its results effect greater efficiency with low wages, and this element has contributed to the industrial development of high-grade manufactured products abroad from minerals exported from the South.

To compete with Europe under ordinary conditions it is not enough to know how to manufacture high-grade products from minerals—chiefly chemical products—but one must learn also how to compete with the Old World in the management and care of human beings. Within the last few months this condition has already changed, and we have read in the publications of the Government and in trade journals everywhere the glowing account of the golden opportunities offered to the United States by the war to do those things which the foreign countries at war have done best.

In our mineral concern this means Germany, France, Belgium, England, Austria, and to some extent the other European nations. But there is a more serious viewpoint. It is not only an opportunity, it is a duty of the South, first to the world, and then to the South's own people, to do what it is now impossible abroad; to furnish, efficiently, high-grade mineral products to the world. That this trade is demoralized is true not only of the finished products obtained in this country, but the demoralization has been equally severe in the many branches of the chemical industry of the United States. Owing to conditions of customs duties many of the basic materials for chemical products have been imported to be finished here, and even these can be obtained only with the greatest difficulty.

The fact that these foreign importations are not already replaced by productions in the United States may be attributed to the hope which everyone shares of a quick end to the terrible conflict and the hope of a restoration of the former condition. Many of our very best chemical manufacturers are Germans, or French, or English, and with developed trade associations with the Old World, which they have not the slightest wish to break. Must they be broken? It is safe to say that more than 1000 of chemical manufacturers and their important associates, in fact, the greater part of the trained chemists of Germany, and the same is true to a great extent of the other nations at war, where the best chemists have been removed from their place in the industry. Many years must elapse before other scientific brains can be educated to manage these vacant factories. In the case of Belgian chemical works, the necessity of long years of rebuilding before the factories will be ready to produce again shows the folly of believing that former conditions will be readjusted.

More need not be said to show what the United States must do at this time—looked at from the point of view of the investing capitalists. Was there any suspicion of such an opportunity arising for the final step in the chain to which we have referred above, a chain in which the Southern minerals have been discovered, and usually sent abroad and there developed to the high stage of value which the trade requires?

The pig-iron of Birmingham, the fertilizers of all parts of the South and the mineral oils of Louisiana and Texas—all these have shown how materials can be raised to their full value at home. Now this principle of manufacturing at home must be applied further and carried out quickly in one place or another.

Such a wonderfully large and entirely unexpected market for high-class Southern products would not have been dreamed of a year ago. To point out definite avenues of such developments there is no need to go further than Birmingham. Here the coke industry has been developed to the by-product-oven stage, already great quantities of coal-tar oils are produced daily, but what becomes of these oils?

Much of the product goes to low-grade uses, such as road material, or is burned as fuel, and the rest is sold to be worked up elsewhere, even to the next stage of separating these oils so that each one can find its best utilization. Is there a market for these things? There certainly is. At this very time large industries are searching for toluol (next to the lightest oil of the coal-tar series). The first number, benzol, is always in demand, but even this first stage of manufacture, the separating of these to make each one more valuable, is scarcely attempted in the South. The next stage, the conversion of these individual oils into nitro-products and the corresponding aniline dyes, is barely attempted. Certain aniline oil, naphthylamine toluidine and other basic materials for aniline dye manufacture could be easily produced at the Birmingham works by the analogy of the development of by-products, such as pepsin, etc., in the packing-house of Chicago.

It is evident that the minerals and mineral products which we have previously received from abroad have been imported for convenience rather than lack of natural resources.

Potassium salts and magnesite are about the only two mineral industries which need more than industrial enterprise from their development from known resources in the South, or if, as in the case of platinum and radium, an adequate supply has not already been pointed out in the South, it is altogether probable that such a supply could easily be found by combining such Governmental organizations as the United States Geological Survey and the Bureau of Mines to direct commercial enterprise in their search. It is possible to go further than this and to state that among the minerals imported there are many which are found either exclusively in the Southern States or where the chief supply originates in that region—for example, fluor spar, flint, aluminum ore, tin, not to mention again the monopoly which the Southern States have upon sulphur. But the development of these more or less latent industries for the replacement of foreign importation is always a gradual process and which, as a matter of fact, has been unusually rapid in America as compared with other parts of the world.

Hon. Franklin K. Lane, Secretary of the Interior, at the very outset of the European war promptly called the public attention to the real necessity for a readjustment of American industries in an interview published August 16.

The pamphlet published by Director George Otis Smith of the United States Geological Survey on "Our Mineral Reserves" takes up the different mineral industries one after the other and shows the developments necessary for replacing imports. Short statements are made as to the localities from which additional mineral supplies can be obtained, and it is sufficient to note that with almost every mineral mentioned deposits in the South are included. The statement begins with coal and concludes with the following significant paragraph:

"The high-grade steaming coals of the United States, which would be the coals in chief demand for export trade, are found largely in the eastern half of the Appalachian coal field, which includes the Clearfield, Allegheny and Somerset districts of Pennsylvania on the north; the Cumberland region of Maryland; the Elk Garden, Fairmont, New River and Pocahontas districts of West Virginia; the southwestern counties of Virginia; the eastern counties of Kentucky and Tennessee, and the Birmingham and other districts of Alabama on the south. Of these coals, those available in highest quality are the semi-bituminous coals of the Pocahontas, New River, Elk Garden and Cumberland districts and the better grades of Clearfield. The fields nearest the seaboard are those of the Cumberland and Elk Garden districts, but these fields are approaching exhaustion, so that the advantage in this respect will fall to the Alabama mines, which are being made more easily and cheaply accessible by the slack-water improvements in Warrior River, which have already resulted in a marked advance of Mobile as a shipping port."

Turning to the metals, reference is made to the fact that deposits of manganese ores are most abundant in

the Appalachian and Piedmont regions, in the Southern over considerable areas in adjoining regions of North Mississippi Valley, as well as on the Pacific coast.

"The principal producing districts up to the present time have been the James River-Staunton River and Blue Ridge regions of Virginia, the Cave Springs and Dakota and in South Carolina near Gaffney and spread Cartersville districts in Georgia, the Batesville district in Arkansas, and the Livermore and Tesla districts in California. Districts of minor importance are the New River region in Virginia, the Northeastern Tennessee region, the McCormick region in South Carolina, and the Little Grande district in Utah. Mining and shipping in Virginia are now confined to the Blue Ridge and James River-Staunton River regions."

Among the metals, the production of tin should be most favorably affected by the present conditions. Where tin occurs in place the ores normally are of very low grade, as in the tin mines of Cornwall, England. It has been to the placer concentration in the East Indies that the large supply for the world has been sought, and the United States contains such placer concentration covering considerable areas in the Black Hills of South Carolina. These placer concentrations of tin ores are by no means so rich as those in the East Indies and the veins of tin-bearing gneiss or coarse granite of North and South Carolina are of still lower grade. Notwithstanding this fact, regions have already produced tin ores, and probably at a profit, during the normal conditions of competition with foreign ores. This makes it extremely probable that the quick application of good mining methods in North and South Carolina can develop a large and profitable industry, but what is particularly needed is facility for smelting tin ore in this country.

While the war conditions have thus offered a great opportunity for the development of the domestic tin supply, the depressed financial conditions on the other hand practically offset this benefit at the present time. This depressed condition should rapidly rally with cessation of hostilities, and should the high price of tin continue the South will surely respond.

Thus far the copper industry has been greatly depressed by the lack of its foreign market, and here again the cessation of foreign hostilities and the necessity for new buildings and other uses for copper must create an increased demand sufficient to make up for the low export trade of the last few months.

Dr. Smith in calling attention to the widespread use of metallic aluminum, notes also that a considerable part of the supply has been from France and other foreign countries, and that with the possible cutting off of the European supply of metals, the domestic production will be increased to supply the increasing need. This, as the report shows, will call for an increased supply of the mineral bauxite in Arkansas, Tennessee, Georgia and Alabama. It is a mineral that comes exclusively from the South. The three Southern Appalachian States mentioned also furnished the greater part of the bauxite used in the manufacture of aluminum salts. In spite of the plentiful supply of this ore in the South, over 20,000 long tons of bauxite were imported, valued at over \$80,000, much of it coming from France. As usual, the salts of aluminum have been largely imported. Bauxite is also used extensively in making brick for furnace linings and artificial abrasives.

As to antimony and arsenic, these can be obtained from Gillham, Ark., among other places, and Brinton, Va., is among the two localities where works for the exclusive production of arsenic have been erected; the other place is Mineral, Washington.

Among the miscellaneous minerals, barytes has always been essentially a Southern product, coming principally from Virginia and Missouri. This mineral is used for a variety of manufactures, including paint, wallpaper, glass, insecticides, etc. The largest plants for these products are near the Atlantic coast. Only within the last few weeks one of these plants has bought for development a large deposit in Georgia.

North Carolina, South Carolina and Tennessee are among the Southern States already producing barytes, and the conditions justify very considerable search in other Southern localities, especially in Calhoun, Etowah, St. Clair and Bibb counties in Alabama, and in the central and western portions of Kentucky.

Among the fertilizers it is unnecessary to call attention again to the monopoly which the South has held in phosphate deposits. Foreign conditions have demoralized the export trade, with the result that the producers

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are collecting reserves against the time when exports will be resumed and a sudden increased demand shall appear; meanwhile it would be most fortunate if these stocks could be converted into completed fertilizers ready to ship abroad.

It has been stated that potash salts are only obtainable in Germany. While that is true of present conditions, it seems that the present crisis in this needed fertilizer must encourage successfully the obtaining of potash salts from feldspar and similar potash minerals. Beyond question the great necessity will be followed up by the inventor and the manufacturer who follows him.

Allied with the potash development is that of nitrates of soda, calcium, potassium, ammonium, etc., and the hope has been expressed in the report on "Our Mineral Reserves" that these nitrates will now be developed by the fixing of atmospheric nitrogen by electricity. It should be noted here that the pioneer developments of this kind have been made in South Carolina, but still more important is the increased saving of ammonium salts from the gas works and by-products coke oven in all parts of the South, especially in the Birmingham district.

Graphite is a mineral which is found in considerable quantity in North Carolina, Alabama and Texas, as well as in States outside of the South. The supply is ample, and its chief value lies in the aid it can give in other local industries.

Similar aids for the development in chemical industries are the deposits of flint, specially for use in tube mills for the grinding of materials, where keeping the material free from iron is an object, as is so frequently the case in chemical manufacture. The principal localities in which flint pebbles have been found suitable for the above work are in the Gulf States. The Arkansas flint pebbles occur in several countries, and these are pointed out in the Survey report as well as localities in Northern Mississippi and Texas.

While there are many other minor minerals which loom up as important at this time in view of the necessity of "home manufacture," space will only be taken to revert for the moment to the by-products from the coke industry, especially the utilization of coal tar.

The Survey report on "Our Mineral Reserves" shows that about 125,000,000 gallons of coal tar was saved in the year 1912, and a very large amount was either allowed to go to waste or burned for fuel. Most of this material is simply distilled for the recovery of light oils, such as benzol and creosote. Although the coal tar contains from $\frac{1}{2}$ to 1 per cent. of carboic acid, we exported some 36,000,000 pounds of coal tar and imported over 8,000,000 pounds of carboic acid last year and \$12,000,000 worth of chemical products from coal tar, including dyes and medicinal preparations. The need of chemical manufacture of dyes is said by some to be self-evident, and yet within the last few weeks there have appeared very carefully written articles by competent authorities which indicate that it is useless to try, even at this time, to compete with superior technological knowledge, etc., in Germany, and these authorities point out the long distance between the points of production of coal tars and manufacturing centers. While these arguments have much to favor them and are worthy of consideration, it is believed that similar arguments could be made to show that we ought not to produce any iron products whatever in the United States on account of the superior methods and quality of the products in Germany, Belgium and other foreign countries. As to the supposed greater cost of hauling the crude materials to a central manufacturing point, the fact remains that enough coal tar raw material is produced in Birmingham alone for the establishment and support of a large chemical industry in that town with most all of the raw materials easily obtained without expensive transportation. A number of manufacturing centers are equally able to produce the raw material with practically no transportation whatever, and thus the chief argument that in Germany the chemical works are so near the sources of coal-tar supplies as to eliminate long freight hauls seems hardly a valid reason for holding back the United States' development.

In general, it may be evident from what has been written above and from the general study of the situation that the rate of development of manufacturing plants for our raw mineral products must be greatly accelerated by the present foreign conditions. Such manufactures have become a matter of present necessity which is believed will be vigorously met during the next year.

\$127,000,000 in Building in 58 Southern Cities in 1914

Permits for building construction in 58 cities of the South in 1914 represented an aggregate of something more than \$127,000,000. Compared with 1913, these building operations show appreciable gains in some cities, but in others decreases are apparent, the falling off in building operations having been most marked in the latter months of the year. The following figures dealing with details in the several cities have been for the most part furnished to the MANUFACTURERS RECORD by the building departments of the governments of the cities mentioned.

The cost of construction for which permits were issued in Baltimore, Md., during 1914 for new improvements was estimated at \$11,510,236, additions \$1,161,513 and alterations \$918,500. Figures by months for additions, alterations and new construction, respectively, are as follows: January, \$60,000, \$55,000, \$178,790; February, \$48,000, \$50,000, \$1,483,855; March, \$64,000, \$86,000, \$679,767; April, \$75,000, \$30,000, \$1,015,900; May, \$106,000, \$85,000, \$1,186,904; June, \$155,500, \$84,000, \$2,246,410; July, \$177,690, \$92,000, \$1,044,969; August, \$125,580, \$75,000, \$1,784,700; September, \$89,000, \$100,000, \$164,743; October, \$88,000, \$102,000, \$289,567; November, \$154,734, \$75,000, \$324,950; December, \$18,000, \$24,500, \$509,620. Although the last four months of the year show a large decrease in the cost of new improvements as compared with other months, the total for the year is said to exceed that of any previous year. In Cumberland, Md., a total of 122 permits was issued during the year for new buildings and 81 permits for alterations and additions. The aggregate cost of construction is estimated at \$355,853, distributed as follows: One hundred and three dwellings, \$258,704; 81 additions and improvements, \$33,690; 18 business houses, \$61,450; church, \$2000.

In the District of Columbia the cost of construction for which permits were issued during 1914 was estimated at \$9,073,573. By months the report is as follows: January, \$461,760; February, \$884,036; March, \$1,544,778; April, \$851,309; May, \$1,054,404; June, \$942,325; July, \$1,192,883; August, \$491,576; September, \$390,511; October, \$407,411; November, \$419,544; December, \$433,036.

The report of the building inspector of Richmond, Va., shows that a total of 757 permits was issued during 1914 for new construction estimated to cost \$2,930,237, and 834 permits for alterations and repairs to cost \$461,334, making a total of \$3,391,571. As compared with 1913 these figures show a decrease of \$244,905. In December 54 permits were issued for new buildings estimated to cost \$193,902 and 45 permits for alterations and repairs to cost \$18,600, making a total of \$212,502. As compared with December, 1913, these figures show an increase of \$41,508. Prospects for 1915 are bright, and with the opening of favorable weather it is expected that a number of important structures will be erected.

In Norfolk a total of 683 permits was issued during the year, representing a cost of construction of \$2,014,681. As compared with 1913 these figures show a decrease of \$4 in the number of permits and \$540,042 in the cost of construction. The year has been characterized by the small number of large buildings erected and by the large number of residences, most of the latter being of the better class and costing from \$2500 to \$10,000 or more. The largest permit issued during the year was for the Talbot building, amounting to \$151,213.

The Commissioner of Revenue of Lynchburg estimates the total value of building operations in that city during 1914 at about \$800,000.

For several years past building operations in Roanoke have shown an increase over each preceding year. Up to December 28 of 1914 permits were issued for construction to cost \$1,415,077, as compared with \$1,231,964 for 1913. A number of important structures are under consideration at the present time, and it is thought 1915 will show an increase over the year just closed.

A total of 261 permits was issued in Raleigh, N. C., during the year, which represented a cost of construction of \$1,459,221. As compared with 1913 these figures show a decrease of two in the number of permits, but an increase of \$177,288 in the cost of construction. The cost of construction for which permits were issued

in Charlotte during 1914 was estimated at \$1,032,280, as compared with \$1,490,766 for 1913. Figures for 1914 by months are as follows: January, \$161,429; February, \$65,041; March, \$122,350; April, \$124,169; May, \$65,045; June, \$160,495; July, \$112,375; August, \$163,750; September, \$27,164; October, \$18,000; November, \$1980; December, \$7300.

A total of 161 permits was issued in Durham during the year, representing a cost of construction of \$935,784. As compared with 1913 these figures show an increase of 72 in the number of permits and \$704,283 in the cost of construction. Construction for 1914 by months was as follows: January, 13 permits, \$39,244; February, 16 permits, \$50,350; March, 12 permits, \$14,065; April, 14 permits, \$27,750; May, 73 permits, \$137,525; June, 12 permits, \$32,700; July, 20 permits, \$553,775; August, 17 permits, \$36,085; September, 10 permits, \$9019; October, 13 permits, \$35,800; November, 5 permits, \$4350; December, 6 permits, \$24,100.

A total of 433 permits was issued in Winston-Salem during the year, representing a cost of construction of \$811,141. These figures show a decrease of about \$340,000 as compared with 1913. The report by months is as follows: January, 34 permits, \$41,032; February, 24 permits, \$21,597; March, 44 permits, \$62,100; April, 36 permits, \$105,792; May, 40 permits, \$147,419; June, 48 permits, \$91,015; July, 42 permits, \$172,935; August, 27 permits, \$25,986; September, 40 permits, \$35,000; October, 31 permits, \$35,380; November 37 permits, \$37,515; December, 33 permits, \$35,370.

A total of 371 permits was issued in Asheville during 1914, representing a cost of construction of \$792,587. As compared with 1913 these figures show an increase of 65 in the number of permits and \$106,259 in the cost of construction. Asheville's 1914 building record is considered the best the city has ever made, and prospects for 1915 are good. The number of permits issued and cost of construction by months during 1914 are as follows: January, 31 permits, \$36,665; February, 32 permits, \$67,012; March, 39 permits, \$145,380; April, 53 permits, \$84,791; May, 46 permits, \$113,474; June, 23 permits, \$70,595; July, 29 permits, \$84,270; August, 28 permits, \$38,890; September, 33 permits, \$46,715; October, 28 permits, \$46,400; November, 29 permits, \$38,630; December, 9 permits, \$19,765.

In Greensboro it is estimated that \$440,118 was expended for the erection of new buildings. A total of 177 permits was issued. As compared with previous years these figures show that building operations have not fallen off. Construction for 1914 by months was as follows: January, 15 permits, \$26,250; February, 17 permits, \$19,668; March, 19 permits, \$40,050; April, 20 permits, \$48,935; May, 23 permits, \$68,500; June, 14 permits, \$48,775; July, 14 permits, \$31,050; August, 11 permits, \$29,350; September, 12 permits, \$61,425; October, 14 permits, \$22,815; November, 10 permits, \$24,800; December, 8 permits, \$18,500.

Building operations in Kinston, N. C., for 1914 were more extensive than for any previous year, it being estimated that more than \$750,000 has been expended for buildings completed and begun.

A total of 685 permits was issued in Columbia, S. C., during the year, representing a cost of construction of \$426,880, of which 292 were for new buildings to cost \$375,467 and the remainder for alterations and repairs. As compared with 1913 these figures show an increase of 69 in the number of permits, but a decrease of \$302,949 in the cost of construction. Figures for 1914 by months are as follows: January, \$60,679.50; February, \$77,323; March, \$40,388; April, \$56,090; May, \$30,418; June, \$52,374.40; July, \$25,853; August, \$42,493; September, \$12,297.50; October, \$10,267; November, \$13,597; December, \$5100.

Permits issued in Greenville, S. C., during 1914 represented a cost of construction of \$544,004 as compared with \$484,783 for the preceding year. The cost of construction by months for 1914 was as follows: January, \$72,891; February, \$19,601; March, \$31,210; April, \$65,837; May, \$42,314; June, \$85,275; July, \$83,980; August, \$19,920; September, \$26,677; October, \$43,114; November, \$50,790; December, \$2395.

Permits were issued in Charleston, S. C., during the

year to the number of 480, representing a cost of construction of \$476,493, as against 576 permits for 1913, representing a cost of construction of \$589,296. The figures for 1914 do not include the cost of the Clinchfield and Southern terminals, which would raise them to about \$2,000,000.

The value of building operations in Anderson, S. C., during 1914 was estimated at \$270,000, an increase as compared with 1913.

In Atlanta, Ga., the cost of construction for which permits were issued during 1914 was estimated at \$1,561,387. As compared with 1913 these figures show a decrease of about \$600,000, which is largely explained by the fact that there were no unusually large structures begun in 1914. Figures by months for the past year are as follows: January, \$322,965; February, \$335,391; March, \$561,644; April, \$565,879; May, \$732,299; June, \$419,654; July, \$495,902; August, \$372,033; September, \$177,804; October, \$215,988; November, \$222,104; December, \$132,724.

The report of the building inspector of Savannah, Ga., shows that 661 buildings were completed in that city during 1914, representing a cost of construction of \$1,583,680, as compared with \$1,227,495 for 1913. Permits were issued in 1914 to the number of 714, but have not all been completed. The report indicates that building activity during the first six months of 1914 exceeded any similar period in the city's history, but fell off somewhat during the latter half of the year.

Permits were issued in Augusta, Ga., during the year for construction estimated to cost \$980,000.

A total of 616 permits was issued in Macon, Ga., during the year, representing a cost of construction of \$676,210. As compared with 1913 these figures show an increase of 232 in the number of permits but a decrease of \$3627 in the cost of construction.

The cost of construction for which permits were issued in Athens, Ga., during the year was estimated at \$372,497. The work distributed by wards was as follows: First, \$37,292; second, \$80,600; third, \$52,740; fourth, \$91,815. In addition, \$65,386 was expended for school improvements for which no permits were issued.

A total of 280 permits was issued in Columbus, Ga., during the year, representing a cost of construction of \$487,516.

In Birmingham, Ala., a total of 4161 permits was issued during the year, representing a cost of construction of \$3,043,374. These figures show a large decrease as compared with 1913. The number of permits and cost of operations by months for the past year are as follows: January, 324 permits, \$250,230; February, 335 permits, \$216,455; March, 398 permits, \$239,595; April, 400 permits, \$318,144; May, 376 permits, \$288,998; June, 359 permits, \$472,313; July, 408 permits, \$468,385; August, 380 permits, \$314,549; September, 356 permits, \$162,315; October, 323 permits, \$138,373; November, 251 permits, \$76,710; December, 254 permits, \$100,307.

Building permits in Mobile, Ala., during the year exceeded those of 1913 by 35, and it is estimated that the cost of construction during 1914 will exceed that of 1913 by \$200,000. Permits were issued during 1914 to the number of 221, which represent a cost of construction of \$573,135. These figures do not include the post-office, which is now under construction and will cost about \$250,000. In 1913 a total of 186 permits was issued, representing a cost of construction of \$607,145. Prominent among the buildings begun or erected during the past year are four school buildings, costing about \$105,000, and a freight depot and warehouse of the Southern Railway, costing about \$250,000.

A total of 888 permits was issued in Jacksonville, Fla., during the year, representing a cost of construction of \$1,667,470. These figures include the erection of 528 frame buildings at an estimated cost of \$800,785, 165 alterations to frame structures at a cost of \$90,796, erection of 71 brick structures costing \$628,925, and 124 alterations to brick buildings costing \$138,864. In addition, there was a total of 1636 permits issued for miscellaneous construction, the value of which was not entered in the report. March was the best month of the year, the construction for which permits were issued being estimated at \$293,023. Construction for 1914 by months was as follows: January, \$208,941; February, \$134,365; March, \$239,923; April, \$185,568; May, \$114,171; June, \$192,172; July, \$128,904; August, \$151,705; September, \$62,992; October, \$60,891; November, \$98,935; December, \$79,800.

A total of 1567 permits was issued in Tampa, Fla.,

during 1914, representing a cost of construction of \$1,615,037. As compared with 1913 these figures show an increase of 76 in the number of permits and \$130,941 in the cost of construction. Figures by months are as follows: January, \$181,240; February, \$109,820; March, \$114,855; April, \$125,280; May, \$101,945; June, \$213,050; July, \$110,345; August, \$358,868; September, \$80,550; October, \$125,422; November, \$54,361; December, \$39,295.

In Pensacola, Fla., a total of 115 permits was issued during the year, representing a cost of construction of \$116,719 for new work and \$69,812 for repairs. The value by months of new construction and repairs, respectively, is as follows: January, \$15,175; \$5844; February, \$4140; \$1942; March, \$12,925; \$7439; April, \$6885; \$7214; May, \$6750; \$5887; June, \$16,406; \$4908; July, \$11,124; \$1260; August, \$16,050; \$1154; September, \$319,500; \$4109; October, \$27,464; \$8011; November, \$4900; \$7680; December, \$5400; \$11,261.

Aggregating a total of \$1,971,401, the cost of construction for which permits were issued in Nashville, Tenn., during 1914 establishes a better record than Nashville has made in seven years. As compared with 1913 these figures show an increase of \$304,799.

A total of 2248 permits were issued in Chattanooga, Tenn., during the year, representing a cost of construction of \$1,078,755. Figures by months are as follows: January, 118 permits, \$48,780; February, 156 permits, \$55,170; March, 179 permits, \$108,925; April, 188 permits, \$111,410; May, \$219,490; June, 224 permits, \$78,400; July, 190 permits, \$60,045; August, 214 permits, \$116,270; September, 202 permits, \$128,810; October, 217 permits, \$77,387; November, 280 permits, \$61,870; December, 74 permits, \$9950.

Memphis, Tenn., made much building progress in 1914, including residences, business structures, railroad construction, etc. It is estimated that 2438 buildings were erected during the year, the most important structure being the Grand Central Station, costing about \$2,000,000. The cost of all construction, including railroad work in and around Memphis, is estimated at \$12,000,000.

Records show that 84 buildings were erected in Knoxville, Tenn., during 1914, representing a cost of construction of \$438,917, which is an increase of \$48,876 as compared with 1913. Operations have not been active for several months, but it is thought they are now recovering, and it is believed that 1915 will be a good building year. Figures for 1914 by months are as follows: January, \$42,200; February, \$44,745; March, \$80,175; April, \$99,355; May, \$31,120; June, \$58,281; July, \$66,350; August, \$9053; September, \$22,445; October, \$16,477; November, \$6346; December, \$11,340.

Building operations in Louisville, Ky., during 1914 were active, and permits were issued for a number of important structures. A total of 2279 permits was issued, representing a cost of construction of \$4,396,380, a decrease of 147 in the number of permits as compared with 1913, but an increase of \$342,100 in the cost of construction. The largest permit issued during the year was that for the high school, costing about \$258,000.

The cost of construction for which permits were issued in Lexington, Ky., during the year was estimated at \$585,270, of which \$257,900 was expended for residences, additions and repairs and \$327,370 for business houses, warehouses and repairs. Figures by months are as follows: January, \$19,205; February, \$11,435; March, \$31,465; April, \$82,850; May, \$38,950; June, \$143,425; July, \$76,510; August, \$56,005; September, \$58,165; October, \$53,470; November, \$6840; December, \$6950.

Permits were issued in Gulfport, Miss., during 1914 to the number of 47, representing a cost of construction of \$52,055. The majority of structures are frame residences, although three substantial brick buildings were erected.

The cost of construction for which a total of 1374 permits was issued during the year in Shreveport, La., was estimated at \$1,270,957, an increase of about \$18,000 as compared with 1913. In the past four years permits have been issued for construction to cost \$5,304,823. The number of permits issued and the cost of construction by months for 1914 are as follows: January, 153 permits, \$181,500; February, 107 permits, \$115,002; March, 120 permits, \$122,503; April, 131 permits, \$160,698; May, 150 permits, \$106,800; June, 143 permits, \$123,122; July, 134 permits, \$149,212; August, 132 permits, \$79,506; September, 96 permits, \$58,677; October, 92 permits, \$75,985; November, 60

permits, \$77,764; December, 56 permits, \$17,818. The falling off of building operations in the past five months is explained by the fact that about \$3,000,000 worth of cotton is being held, which affects the supply of money, but it is generally believed construction activity will go forward in the spring despite this fact.

The cost of construction for which permits were issued in Lake Charles, La., during the year was estimated at \$326,251. The valuation by months is as follows: January, \$17,843; February, \$18,611; March, \$15,000; April, \$31,560; May, \$86,622; June, \$47,285; July, \$5000; August, \$16,317; September, \$26,543; October, \$19,000; November, \$11,970; December, \$10,500.

In St. Louis, Mo., a total of 8834 permits was issued in 1914, representing a cost of construction of \$12,940,629. The value of municipal buildings for which no permits were issued is estimated at \$434,000. Figures by months for new construction are as follows: January, \$854,122; February, \$908,083; March, \$1,450,034; April, \$1,734,412; May, \$1,496,603; June, \$1,598,625; July, \$1,287,859; August, \$797,169; September, \$669,032; October, \$1,115,874; November, \$650,029; December, \$378,791.

Permits were issued in Kansas City, Mo., during 1914 for 3254 buildings, estimated to cost \$10,214,970. As compared with 1913 these figures show a decrease of about 9 per cent. For the first six months of the present year there was an increase of about 66 per cent. as compared with the corresponding period of 1913.

It is estimated that the expenditure of private and municipal capital in Jefferson City, Mo., during 1914 for buildings of various kinds will reach a total of \$650,202, while the expenditure of State capital will reach a total of \$584,764.

The cost of construction for which permits were issued in Oklahoma City during the year was estimated at \$1,972,442. Permit for the State Capitol, to cost \$1,500,000, was issued in November. Figures by months for 1914 are as follows: January, 20 permits, \$10,555; February, 12 permits, \$12,235; March, 26 permits, \$161,875; April, 23 permits, \$35,825; May, 18 permits, \$28,162; June, 22 permits, \$36,590; July, 16 permits, \$20,880; August, 20 permits, \$99,115; September, 15 permits, \$29,450; October, 20 permits, \$19,975; November, 9 permits, \$1,509,915; December, 9 permits, \$7865.

The cost of construction for which permits were issued in Tulsa, Okla., during 1914 is estimated at \$1,900,549, the leading month being August, when permits were issued for construction to cost \$484,030. Figures for the other months are as follows: January, \$153,249; February, \$104,970; March, \$218,540; April, \$227,575; May, \$105,660; June, \$210,950; July, \$115,185; September, \$39,600; October, \$53,790; November, \$116,000; December (estimated), \$77,000.

In Little Rock, Ark., a total of 725 permits was issued during the year, representing a cost of construction of \$1,503,172, an increase of \$169,850 as compared with 1913. Figures for 1914 do not include work on the Capitol building, for which permits were not secured.

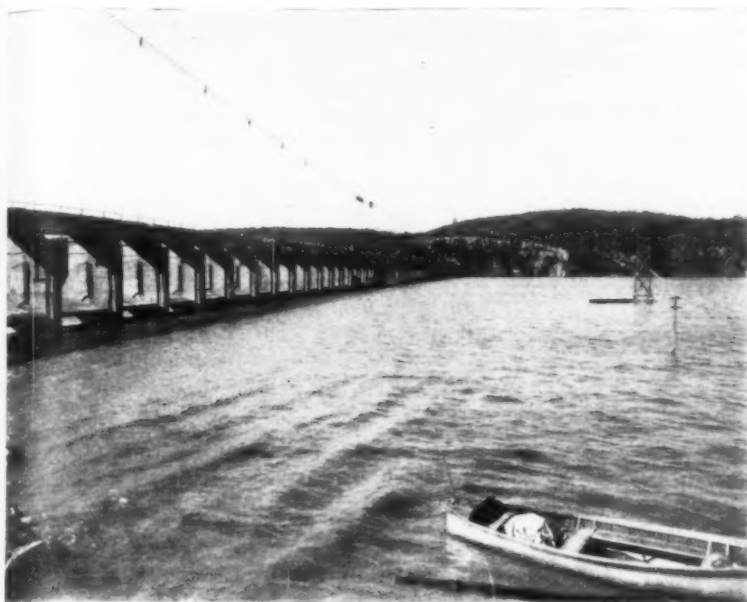
In Helena, Ark., permits were issued for construction during the year estimated at \$467,643. As compared with 1913 these figures show an increase of \$328,773. Figures by months for 1914 are as follows: January, \$650; February, \$42,775; March, \$13,750; April, \$10,140; May, \$305,255; June, \$16,058; July, \$6515; August, \$900; September, \$26,500; October, \$15,625; November, \$7975; December, \$21,500.

The cost of construction for which permits were issued in Huntington, W. Va., during 1914 was estimated at \$1,100,852, a decrease of \$14,668 as compared with 1913. Figures for 1914 do not include the cost of the city hall, central fire station, schools and other city buildings, for which no permits were issued.

Permits were issued in Dallas, Tex., during the year to the number of 1852, representing a cost of construction of \$5,093,497, as compared with \$8,480,580 for the previous year. Figures for 1914 by months are as follows: January, \$727,635; February, \$565,320; March, \$807,213; April, \$565,335; May, \$540,100; June, \$588,945; July, \$941,580; August, \$220,175; September, \$140,269; October, \$204,150; November, \$133,850; December, \$110,025.

The cost of construction for which permits were issued in Houston, Tex., during the year was estimated at \$3,803,049. As compared with 1913 these figures show a decrease of \$1,629,216, which is attributed in a measure to the fact that 1912-13 saw the construction of more skyscrapers and brick apartment-houses than

THE \$1,750,000 DAM IN COLORADO RIVER AT AUSTIN, TEX.



LAKE AUSTIN, EXTENDING THIRTY MILES ABOVE THE DAM.



WATER FLOWING OVER THE DAM FOR THE FIRST TIME.

Water is running over the new big Austin dam recently completed primarily as a source of water for the city and also to transmit electricity in and around Austin. This hydro-electric enterprise was undertaken in 1912 by the City Water-Power Co., Hartford, Conn., which was organized by Hartford capitalists to complete a contract that had previously been awarded by the city for a dam and power plant. Reinforced concrete construction was adopted for this dam across the Colorado River, forming a water reservoir and pleasure lake about 30 miles long and one-quarter mile wide. It is expected that about 7200 horse-power will be developed for transmission by electricity. The entire expenditure for construction and equipment approximated \$1,500,000. H. B. Freeman, Jr., of Hartford is president of the City Water-Power Co., Lamar Lyndon of New York being the designing and consulting engineer, with Frank S. Taylor as resident and directing engineer at Austin.

have been erected in Houston in other years. July was the banner month of 1914, the cost of construction reaching a total of \$1,088,506. Figures for the other months follow: January, \$206,255; February, \$351,441; March, \$263,773; April, \$369,529; May, \$497,321; June, \$273,666; August, \$156,877; September, \$146,287; October, \$219,854; November, \$98,911; December, \$130,678. Permits were issued in Houston Heights during the year for construction estimated to cost \$281,361.

In San Antonio, Tex., a total of 2336 permits was issued during 1914, representing a cost of construction of \$2,840,132. As compared with 1913 these figures show an increase of nearly \$700,000. The number of permits issued by months during 1914, with the cost of construction, follows: January, 266, \$317,865; February, 219, \$577,950; March, 220, \$204,540; April, 236, \$324,760; May, 200, \$224,135; June, 205, \$240,290; July, 215, \$229,547; August, 162, \$170,050; September, 168, \$188,125; October, 202, \$83,000; November, 137, \$210,575; and December, 108, \$69,295.

Permits were issued in Waco, Tex., during 1914 for construction estimated to cost \$1,726,385, as against \$2,561,896 for 1913. The cost of construction for which permits were issued during December, 1914, was estimated at \$30,703.

The cost of construction for which permits were issued in Fort Worth, Tex., during 1914 reached a total of \$2,181,931. As compared with 1913 these figures show an increase of \$68,378. Figures by months are as follows: January, \$179,265; February, \$243,063; March, \$193,290; April, \$214,050; May, \$215,570; June, \$180,175; July, \$186,328; August, \$301,100; September, \$72,720; October, \$145,185; November, \$104,840; December, \$141,485.

The cost of construction for which permits were issued in El Paso, Tex., during 1914 was estimated at \$1,934,297. As compared with 1913 these figures show an increase of \$593,033. In December 62 permits were issued, representing a cost of construction of \$83,270. Figures by months are as follows: January, \$149,995; February, \$139,182; March, \$248,960; April, \$229,335; May, \$123,225; June, \$146,326; July, \$186,510; August, \$217,410; September, \$126,260; October, \$114,340; November, \$159,285; December, \$83,470.

More than 1300 permits were issued in Galveston, Tex., during 1914, representing a cost of construction of \$1,656,675. As compared with 1913 these figures show an increase of about \$425,000. By months the value of operations in 1914 is as follows: January, \$119,820; February, \$129,990; March, \$237,650; April,

\$148,700; May, \$140,000; June, \$184,096; July, \$400,000; August, \$72,612; September, \$80,217; October, \$45,000; November, \$70,800; December, \$27,850.

The cost of construction for which permits were issued in Beaumont, Tex., during the year was estimated at \$712,864, about twice as much as for any previous year since 1911. Permits were issued in December for construction to cost \$32,243, as against \$14,783 for December, 1913.

The cost of construction for which permits were issued in Austin, Tex., during the year was estimated at \$685,267. Operations for June represent more than one-third of the total. Figures by months for the year are as follows: January, \$33,163.50; February, \$44,936; March, \$29,879; April, \$37,407; May, \$72,179; June, \$245,095; July, \$28,551; August, \$65,705; September, \$49,221; October, \$26,501; November, \$17,160; December, \$35,390.

The cost of construction for which permits were issued in Corpus Christi, Tex., for the year was estimated at \$505,345, which established a building record for that city.

A total of 188 permits was issued in Wichita Falls, Tex., during the year, representing a cost of construction of \$393,096. It is stated that these figures do not represent the total value of operations, as many structures have been started for which permits have not yet been secured.

It is estimated that the total cost of construction completed in Texarkana, Ark.-Tex., during 1914 will reach \$232,200. A number of important structures are under construction, and work will soon begin on a hospital building to cost \$75,000 and a store to cost \$35,000.

SHARP DECLINE IN IRON ORE

Production of 1914 One-third Less Than That of Record Year, 1913.

The quantity of iron ore mined in the United States in 1914 is estimated as between 41,000,000 and 42,500,000 long tons, and the quantity shipped to receiving ports and blast furnaces between 39,500,000 and 41,000,000 long tons. These figures are given out by the United States Geological Survey, and are derived from data received by Ernest F. Burchard from 52 of the important iron-mining companies, which represent the principal iron-producing districts and whose combined output in 1913 was more than 90 per cent. of the total tonnage of iron ore mined in that year, estimates having been

made for the output of the other companies. In 1913 there were 61,980,437 long tons mined and 59,643,008 long tons shipped. The 1914 returns therefore show a decrease in quantity of ore mined and shipped of about 33 per cent. from the tonnage of 1913.

The Lake Superior district is estimated to have shown a decrease in production of about 37 per cent. and a total production of about 32,915,000 long tons in 1914, compared with 52,518,158 long tons mined in 1913. The shipments of ore from this district apparently decreased about 34 per cent., and accordingly they should approximate 32,790,000 long tons in 1914, compared with 50,168,134 long tons in 1913.

Stocks of iron ore at the mines apparently increased more than 500,000 long tons during 1914, so that the total stocks at the close of 1914 should range between 13,400,000 and 13,500,000 long tons, compared with 12,918,633 long tons at the close of 1913.

Iron-ore prices generally were 50 to 75 cents a ton lower than in 1913—about the same as those of 1912 and 1905. The depression in the iron industry affected seriously the lake carrying trade, which depends largely on the transportation of ore from the Lake Superior district. During the latter part of the autumn many iron mines were closed or running on half-time.

TEXAS POWER & LIGHT CO.

Improvements Under Way Costing About \$600,000.

Approximately \$600,000 will be the cost of betterments in progress and to be undertaken by the Texas Power & Light Co. of Dallas, Tex. These betterments include additional machinery, new plants, extending transmission systems, etc., in Texas cities. They are outlined by R. J. McClelland, vice-president of American Power & Light Co., New York, as follows:

"This work divides itself into two divisions. Building a Diesel electrical plant at Paris for supplying electrical energy for that city, and construction of a line to Honey Grove to connect with line between that point and Bonham, now practically completed. The second division is building a steel tower line from switching station of Texas Traction Co., just north of Dallas, changing of frequency from 25 to 60 cycles of apparatus furnishing power to Texas Traction system; installation of 2000-kilowatt 60-cycle turbo-generator at McKinney generating station of Texas Traction Co., and connection of generating stations of Texas Power & Light Co.

at Denison and Sherman to line supplying substations of Texas Traction Co.

"At Paris we have under construction fireproof building plastered 'self-sentering' on a steel frame. This building will be 54x84 feet, and will house three 550-horse-power McIntosh & Seymour Diesel engines, each direct connected to a 350-kilowatt 2300-volt generator, made by General Electric Co., Schenectady, N. Y.; local electrical distribution for city of Paris will be handled from this station, including motor-generator sets, for supplying energy to Paris Transit Co. Mosher Manufacturing Co., Dallas, will build and erect steel framework of building; McIntosh & Seymour Corporation will erect Diesel engine, while Phoenix Construction Co., general contractor, will do balance of work in connection with station. This station will cost complete approximately \$185,000.

"Paris-Bonham Line.—This will be a 22,000-volt line, constructed on 40-foot creosoted yellow-pine poles, carrying single circuit of No. 2 three-strand copper. This line will supply energy to towns between Paris and Bonham, and with various substations to which it will be connected will require an expenditure of approximately \$125,000.

"Norwood-Jenkins Steel Tower Line.—This line is to be built primarily for supplying energy for operation of Texas Traction Co.'s system. The towns were furnished by American Bridge Co.; size of conductor will be No. 1 three-strand copper; cost of line approximately \$50,000.

"Station Changes.—Voltage 60,000. Texas Power & Light Co. will take over operation of high-tension line now supplying substations of Texas Traction Co. and for supplying energy to this line will install two 3750 K. V. A. bank of transformers at Jenkins, stepping down from 60,000 to 33,000 volts.

"There will be installed in McKinney generating station, for the present as reserve capacity, a 2000-kilowatt steam turbine now at one of the other properties of Texas Power & Light Co. Outside of installation of this turbine, with its condenser, there will be practically no changes made in generating station. Taking over this line, with various substation changes, together with extension of line to Denison and building of telephone line from Norwood to Denison, will require approximately \$200,000.

"At Denison, the terminal of the 33,000-volt line, a transformer bank will be installed, with its necessary control apparatus, having sufficient capacity to supply all energy demanded by that city. For voltage regulation and power factor correction there will be installed at Denison a large synchronous condenser, furnished by General Electric Co. The total work contemplated at Denison will mean an expenditure of approximately \$30,000.

"At Sherman there will be installed a bank of step-down transformers for connecting present Diesel electric station there with the 33,000-volt system. The transformers, with requisite station changes, will require an expenditure of approximately \$20,000."

Will Manufacture Shovels.

About 100 dozen shovels, including their handles, will be the daily capacity of a new department being equipped by the American Manufacturing Co., Chattanooga. The machinery was purchased some months ago, and space for its installation has been provided by erecting a large addition to the company's present concrete building, increasing this structure to a floor space of about three-quarters of an acre. Shovel manufacturing will begin within about 90 days. Harness and saddlery hardware and other steel and wire hardware specialties are the other products of the company.

Double Levee for Freeport.

[Special Correspondence Manufacturers Record.]

Freeport, Tex., January 9.

The E. M. Daley dredge is cutting an additional drainage canal outside the Freeport townsite drainage levee, throwing all the spoil earth from the canal on one side of the new canal as it is progressing, creating a double levee protection for Freeport, the earth being spread upon the present townsite levee, increasing its height to 16 feet, its width to 50-55 feet, with a top or crown of 6 feet.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Clinton, Tenn.—Anderson county voted \$40,000 bonds to complete road.

Paris, Tex.—City voted \$50,000 bonds for street paving.

Jacksboro, Tenn.—Campbell county voted \$150,000 bonds to construct and repair roads.

Bonds to Be Voted.

Barbourville, Ky.—Knox county votes March 6 on \$200,000 bonds to construct roads.

Corpus Christi, Tex.—City votes February 5 on \$100,000 bonds for additional paving.

Eustis, Fla.—City votes February 2 on \$35,000 bonds for paving, etc.

Maryville, Tenn.—Blount county will vote on \$300,000 bonds to construct roads.

Macon, Ga.—City votes March 9 on \$120,000 bonds to pave streets.

Contracts Awarded.

Chattanooga, Tenn.—Hamilton county awarded \$12,513.28 paving contract.

Hagerstown, Md.—State awarded \$14,470.52 contracts to macadamize roads.

Independence, Mo.—Jackson county awarded \$29,784 contract to widen, macadamize and drain about four miles of road.

Independence, Mo.—Jackson county awarded \$13,987 contract to grade and drain six miles of road.

Kansas City, Mo.—City awarded \$10,207 paving contract.

Kansas City, Mo.—City awarded \$3360 contract to construct 24,000 feet of sidewalk.

Tampa, Fla.—City awarded contracts to pave 25 streets, aggregating 78,365 square yards.

Titusville, Fla.—City awarded \$5133.62 contract for road work.

Wartburg, Tenn.—Morgan county awarded contract to macadamize 80 miles of road; \$270,000 bonds available.

Contracts to Be Awarded.

Baltimore, Md.—State receives bids until January 19 to build 2.60 miles of State highway.

Charleston, W. Va.—City will pave 15 streets; estimated cost \$135,270.

Clearwater, Fla.—City will expend about \$40,000 to pave streets.

Devall Bluff, Ark.—Prairie County Road Improvement District No. 1 will construct roads; sold \$60,000 bonds.

Fort Worth, Tex.—City receives bids until January 19 to pave 1650 square yards with bitulithic, rock asphalt or vitrified brick.

Palo Pinto, Tex.—Palo Pinto county invites bids until February 8 to construct about 33 miles of road; \$100,000 bond issue available.

Savannah, Ga.—City will construct asphalt block, granite block and brick pavements; \$120,000 available.

How One Kentucky County Is Solving Its Road Problem.

M. H. Crump, C.E., road engineer of Warren county, writes from Bowling Green, Ky., to the MANUFACTURERS RECORD:

"At the two meetings of road engineers in Atlanta and Chicago I talked with something like 500 practical

road builders, with a view to obtaining a common-sense or scientific system for county road work, with, say, 1000 miles of road with 400 miles of macadam, gravel and graded road, together with 600 miles of earth roads, I found none. I am attempting to solve the problem for this county, Warren. To that end I am putting in 1000 mileposts, for two-mile road sections, each under a patrolman to look after the emergencies, such as fallen trees, mudholes, sudden breaks that occur in a cavernous section, cutting trees, locking wheels, etc.; no expense to be incurred without authority. I have now eight magisterial districts in the county, each with a district foreman, with a full equipment of tools, including graders and plows, who must have a crew of at least 10 hands, at least one of whom must live on the mile of road under repair; every mile in the district (average 100 miles) must be inspected and worked each season, and every lick must be with the view of macadam or gravel. In the season of 1914, from June to November 15, 800 miles of drainage ditches were made and opened, 10 miles graded, 10 miles of nine-foot macadam, with 1000 yards of metal per mile, 5 miles of gravel, 1000 yards each. The macadam roads cost the taxpayers \$500 per mile and the gravel \$300.

"The good citizens supply without cost the teams, the county grades, quarries and crushes the rock. We all co-operate."

An 80-Mile Road Contract.

Grading has been completed for 80 miles of highway in Morgan county, Tennessee, and the County Commissioners have awarded the macadamizing contract to the Oliver & Hill Construction Co. of Maryville and the Solomon Construction Co. of Harriman. The county has bonds for \$270,000 available for road improvements.

To Facilitate Building Contracts.

Builders and Traders' Exchange,
Jacksonville, Fla., January 11.

Editor Manufacturers Record:

Builders' material men and subcontractors have formed the above-named association with a view to making a concerted effort to bring to this city the trade of Southern Georgia and the State of Florida that rightfully belongs to this city. We have opened offices, consisting of public office, estimating room, private consulting room and permanent display room. Builders or contractors can send to this office a set of plans and specifications, and the members will immediately be notified that the plans are on file and they can quote prices on the different items and contracts. In this way the contractors get prices quickly and are not put to the trouble of sending for plans to a number of different people to get the same information. Our exchange is composed of several good firms in each line. In this way contractors get competitive bids. We expect to have on file catalogues of all different kinds of building specialties, and we would be glad to have the different manufacturers send us in catalogues.

L. SMITH, Secretary.

To Promote Livestock Industry.

At the request of the Board of Commerce of Knoxville, Tenn., J. Allen Smith, president, and J. L. Bowles, general secretary, the Knox County Court has adopted a resolution asking the State Legislature for authority to issue \$125,000 of bonds as part purchase price of a farm adjoining the University of Tennessee for donation by the county to the State for the use of the university. The balance of the fund required for the purchase, \$15,000, will be subscribed by citizens of Knoxville. The acquisition of this farm contemplates the furtherance, under the auspices of the State Experiment Station, of the development of the livestock industry and the raising of blooded stock.

Dr. T. Kennard Thomson will address the American Society of Mechanical Engineers at meeting in New York January 15 on the subject of mechanical problems in the building of foundations for tall buildings.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

IMPROVEMENTS AT RICHMOND.

Southern Railway Has Advanced Construction to Provide Adequate Facilities

The Southern Railway has made rapid progress in the construction of new and enlarged freight terminals, engine handling and shop facilities at Richmond and South Richmond, Va. In Richmond proper the first work done was the removal of the old passenger depot at 14th street, and on its site a new outbound freight depot 40x480 feet is nearing completion. One of the old freight depots will be converted into an inbound freight depot and the other into a tobacco warehouse. The rearrangement of existing tracks and the construction of new tracks to serve all old as well as the new facilities and the necessary paving and curbing around the new freight house has involved a large amount of work.

The new depot, which will be of brick construction, with tile roof over the office part of the building and tar and gravel roof over the remainder will be divided as follows: First floor, office 40x40 feet; warehouse 40x440 feet; second floor, office 40x150 feet.

Under this new arrangement the Southern Railway passenger trains, which formerly used the old 14th street passenger station, now use the Main street passenger station.

The work at South Richmond will consist of the following improvements: New combination depot at Hull street; team yard at Perry street; rearrangement of yard tracks to take switching off main line; four-track bridge over tracks at 7th street; new main line from shops to connection with the Seaboard Air Line; extension to roundhouse; extension to patternhouse; new tender repair shop; modern coal, cinder and sand-handling facilities; overhead walkway for employees; new track scales; new smokestacks on roundhouse; new yard office.

These improvements will provide a modern plant of ample capacity to take care of the Southern Railway's present freight business at Richmond and to meet future increases as well as to improve switching conditions and provide easy access to all facilities.

The improvements at South Richmond will afford a modern and ample plant for handling engines and making up trains, and will greatly increase efficiency and safety.

The company also says that the Finley yard, just opened at Birmingham, Ala., will provide adequate facilities there for at least five years, even with a large growth of traffic, and provision has been made whereby the capacity of the yard can be approximately doubled, which, based on increase during the past five years, will provide for the handling of business for from 15 to 25 years.

The completion of these improvements enables the Southern Railway to concentrate at Finley yard work which has been done at four different points scattered over a distance of 10 miles, and will insure against yard congestion and promote an easy flow of traffic, resulting in increased efficiency in handling the heavy business of the Birmingham district, both local and through.

Memphis Bridge to Be Completed.

It is officially announced at Memphis, Tenn., that financing has been completed to resume construction on the new bridge over the Mississippi River there which is being erected by the Arkansas & Memphis Railway Bridge & Terminal Co. for the use of the Rock Island Lines, the Missouri Pacific-Iron Mountain System and the St. Louis Southwestern Railway. The money is to be provided by the sale of \$5,000,000 of 6 per cent. three-year notes to Blair & Co. and the Chase National Bank of New York and the Pennsylvania Bridge Co., according to a report from that city.

As recently published, work on the bridge is well advanced, the piers having been built and considerable of the steel work is prepared by the manufacturers. President H. U. Mudge of the Rock Island Lines is

quoted as saying that construction will now be expedited to make up for lost time. It is said that the bridge will be completed by the end of next summer. The Union Bridge & Construction Co. of Kansas City built the piers, and the Pennsylvania Steel Co. of Steelton, Pa., and the Virginia Bridge & Iron Works of Roanoke, Va., are to furnish the steel superstructure.

RAILROAD TO THE EVERGLADES.

A Palm Beach Company Asks Charter and Will Develop Extensive Lands.

Application for charter has been made in Florida for the Palm Beach & Everglades Railway Co., which proposes to build a line about 50 or 60 miles long from West Palm Beach around the southern end of Lake Okeechobee. The railroad is to follow the West Palm Beach canal for part of the distance, and then run southwest to the lake. This is to result in the development of about 100,000 acres of land known as the Henderson tract, which has, it is stated, been bought by James A. Moore of Seattle, Wash., who now resides at the Hotel Halycon, Miami, Fla. Other tracts of land are also concerned. Rights of way for the line have been obtained, and more are to be secured. Perhaps the road will finally cross the peninsula of Florida to the Gulf of Mexico. It is expected that construction will begin within two months. Richard J. Bolles, formerly of Colorado, but now of Jacksonville, Fla., is said to be extensively interested in lands south of Lake Okeechobee, which will also be benefited by the railroad.

The organizers of the company are Charles H. Baker of New York, president; H. G. Geer of West Palm Beach, vice-president; James A. Moore of Miami, general manager; W. H. DaCamera of West Palm Beach, secretary; T. J. Campbell of the same place, treasurer, the other directors being R. J. Bolles of Jacksonville, J. B. McGinley, Geo. W. Potter, T. T. Reese, Geo. G. Currie, M. E. Gruber, H. P. Dye, George B. Baker, Geo. O. Butler and M. B. Lyman of West Palm Beach and W. M. Butterworth of Miami.

Offices will be established in the McGinley block at West Palm Beach.

Union to Sebastopol, Miss.

The Meridian & Memphis Railway Co., according to a report from Meridian, Miss., has begun construction of its proposed extension from Union westward to Sebastopol, Miss., 15 miles, the contractor being the Purdue Construction Co. The extension is known as the Jackson & Eastern, and is expected to some day reach Jackson, Miss. Connection is made at Union with the Mobile, New Orleans & Chicago Railroad. Subcontracts are being let along the route. Union is 32½ miles northwest of Meridian. Carthage, the county seat of Leake county, is also one of the points to which the new line may ultimately be constructed. That county is now without any railroad. Right of way has all been secured for the extension to Sebastopol. John T. Schley of Mobile, Ala., is president of the Meridian & Memphis Railway, and Samuel A. Neville of Meridian is vice-president.

Mr. Neville is also interested in the construction of the Meridian & Deep Water Railroad, which has been partially constructed eastward from Meridian toward Myrtlewood, on the Tombigbee River, in Alabama. It is designed to connect at Myrtlewood with the Louisville & Nashville Railroad, but construction upon this new line has been stopped for some time, and nothing definite concerning the resumption of work can now be said.

Bankers to Study Missouri Railroads.

It is announced at St. Louis by Richard S. Hawes, president of the Missouri Bankers' Association, that a special committee of bankers has been appointed to study conditions affecting the operation of railroads in that State, with the object of adopting and recommending a plan for their relief, as they are said to be conducting business at a disadvantage. The committee is composed of W. C. Gordon of Marshall, Mo., chairman; A. O. Wilson of St. Louis, J. B. Jennings

of Moberly, W. H. Powell of Sedalia, Thornton Cooks of Kansas City and W. F. Keyser of Sedalia, the latter being secretary. President Hawes is ex-officio a member.

New Equipment, Etc.

Baltimore & Ohio Railroad has ordered 1000 steel hopper cars from the Cambria Steel Co., Johnstown, Pa., and 1000 box cars from the Mt. Vernon Car & Manufacturing Co. of Mt. Vernon, Ill. They will cost between \$1,500,000 and \$2,000,000. The railroad company has also taken options on 1000 more box cars and an equal number of steel hopper cars. Prices have been asked on 25,000 tons of rails. Early delivery is to be made of the equipment which has been ordered.

New Orleans Public Belt Railroad is in the market for 10,000 cypress cross-ties.

Illinois Central Railroad has ordered 25 Mikado type locomotives from the Lima Locomotive Co., Lima, O.

Pennsylvania Railroad is reported contemplating contract for a large number of freight cars.

Atlantic Coast Line and the Seaboard Air Line, according to a market report, have ordered a bridge of 550 tons from the Virginia Bridge and Iron Works, Roanoke, Va., for the Cape Fear River crossing at Hilton, N. C., and it will be used by both lines.

Kansas City, Clay County & St. Joseph Railway is reported in the market for 6 interurban electric cars.

Oklahoma City Railway Co. has ordered 8 double-truck cars from the St. Louis Car Co.

Pennsylvania's 1915 Financing.

The Pennsylvania Railroad Co. at its annual meeting of stockholders in March will ask approval for a proposed issue of \$100,000,000 of bonds, most of which will be used to meet maturing obligations to the amount of about \$94,000,000, it is estimated, while the remainder will be reserved for improvements this year. It is assumed that the bonds will be issued under the large general mortgage which was authorized by the shareholders in March last.

Flagler Car Ferry Begins Service.

A report from Havana says that the large railroad car ferryboat, Henry M. Flagler, of the Florida East Coast Railway, has made its first trip there from Key West. This service is for the carrying of loaded freight cars between the United States and Cuba. The schedule time from dock to dock is eight hours.

Fine Record for Safety.

The Pennsylvania Railroad system announces that during 1914 it carried 189,167,326 passengers, and not one of them was killed in a train accident. The total mileage traveled by the trains (December being estimated) was 67,389,381. More than 3000 trains were operated daily, or over 1,000,000 trains during the year.

To Double Annual Output.

An increase of capitalization from \$500,000 to \$1,000,000 has been decided upon by the Main Island Creek Coal Co., Huntington, W. Va., for the purpose of doubling annual output. This company began operations early last year, and during 1914 mined about 50,000 tons of coal. It will open new mines, construct two steel tipplers, erect 150 houses for miners, install additional electrical equipment, etc.

A \$250,000 Coal Company.

For the purpose of developing Kentucky coal land, the Alum Creek Block Coal Co. of Ashland, Ky., has been incorporated with a capital stock of \$250,000. S. S. Willis, K. M. Fitzgerald and James G. Serey are the principal incorporators, with J. W. M. Stewart as president and Mr. Fitzgerald as secretary-treasurer. Definite plans have not been determined.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

To Manufacture Asbestos Textiles.

Approximately \$125,000 will be invested by the General Asbestos & Rubber Co., Charleston, S. C., for a plant to manufacture asbestos textiles. This enterprise will be located at North Charleston, and comprise a two-story mill-construction building 300 feet long by 100 feet wide, costing \$50,000, with an equipment of machinery costing \$75,000. About 200 operatives will be employed. Lockwood, Greene & Co., Boston and Atlanta, are the architects-engineers in charge, and the Fiske-Carter Construction Co., Worcester, Mass., and Greenville, S. C., is the building contractor. The plant will employ about 200 operatives. It will replace the company's present Charleston textile factory for yarn, cloth, fiber, tape, banding, listing, etc., all the machinery to be removed to the new building and additional machinery to be purchased. The company also has another Charleston factory, this plant producing high-grade packings for steam, water, air, oil and ammonia, brake band lining for automobiles, and various asbestos and rubber specialties. These general products are sold throughout the United States and in foreign countries. The company maintains branches at Pittsburgh and New York. North Charleston is an industrial suburb, north of the city and above the Charleston Navy-yard.

The Savage Mill Improvements.

The Savage (Md.) Manufacturing Co. has about completed its mill and power plant improvements in progress for several months. It has provided practically a new power plant of steam and hydro-electric units, with machinery as follows: 600-kilowatt turbo-generator; three 300-horse-power vertical fire-tube boilers; barometric condenser handling water pumped direct from river; two sets of generators and water-wheels; first set with rated output of 750 kilowatts for normal water conditions; second set of 125 kilowatts for overtime and for operating parallel with steam plant during low water. In the power plant there is space for adding a steam turbo-generator unit of 600 kilowatts. In the mill the company has rearranged its mechanical drives with induction motor group drives. In the picker-room individual motors are mounted on each machine. This mounting is being tested on the large duck looms and twister frames, and will be adopted if found satisfactory. The Savage betterments were contracted for as follows: Engineer, J. E. Sirrine, Greenville, S. C.; general construction contractors, Slattery & Henry, also of Greenville; boilers, D. M. Dillon Steam Boiler Works, Fitchburg, Mass.; electrical equipment, General Electric Co., Schenectady, N. Y.; water-wheels, S. Morgan Smith Company, York, Pa.

The Cotton Movement.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight during the first five months of the present season was 7,835,861 bales, a decrease under the same period last year of 2,640,946 bales. The exports were 2,478,683 bales, a decrease of 2,844,834 bales. The takings were, by Northern spinners, 1,205,740 bales, a decrease of 401,314 bales; by Southern spinners, 1,601,607 bales, a decrease of 199,109 bales. The amount brought into sight in 161 days of the season were 8,368,125 bales, a decrease of 2,519,410 bales. The exports were 2,846,509 bales, a decrease of 2,731,649 bales. The takings were, by Northern spinners, 1,274,909 bales, a decrease of 398,042 bales; by Southern spinners, 1,713,475 bales, a decrease of 199,494 bales.

Durham Hosiery Mills.

Mill No. 6 of the Durham (N. C.) Hosiery Mills will soon be completed in accordance with details announced during 1914. This addition includes a two-story 409x

106-foot mill, with basement and power-plant department, three compartment warehouses and 11,000 spindles, with accompanying equipment furnished by the Whitin Machine Works, Whitinsville, Mass. The other machinery is as follows: 18x36x42 Hamilton-Corliss steam engine, by Hooven-Owens-Rentschler Company, Hamilton, O.; three 200-horse-power Manning type boilers, by R. D. Cole Manufacturing Co., Newnan, Ga.; boiler-feed pumps and make-up pump; fuel economizer, by Green Fuel Economizer Co., Matteawan, N. Y.; Webster 750-horse-power open heater; jet condenser (for which the circulating water will pass through cooling tower with motor-driven fans), by Deane Steam Pump Co., Holyoke, Mass.; Cramer air conditioning motor-driven heads; heating system by Warren Webster & Co., Camden, N. J. Plans and specifications are being furnished by J. E. Sirrine, Greenville, S. C., and the building contractor is the Fiske-Carter Construction Co., Greenville, S. C., and Worcester, Mass.

Greenville Cotton Mills.

Manufacturing of high-grade hosiery yarns is about to begin by the Greenville Cotton Mills, completed at Greenville, N. C., in accordance with details announced last year. This company has a 314x80-foot one-story main building, with a 100x45-foot ell, erected by the Gallivan Building Co. of Greenville, S. C. Its machinery includes 5000 spindles, 200-horse-power steam plant, etc. The machinery was purchased as follows: Textile machinery, H. & B. American Machine Co., Pawtucket, R. I.; boilers, Lombard Iron Works & Supply Co., Augusta, Ga.; engine, Hooven-Owens-Rentschler Company, Hamilton, O.; dynamo and motors, General Electric Co., Schenectady, N. Y. The architect-engineer for the plant was R. C. Biberstein, Charlotte, N. C.

To Weave Woolen Blankets.

A \$25,000 company is planned to be organized by W. L. Fordyce, Philippi, W. Va., and associates to establish woolen mill lately mentioned. It is proposed to install a 10-loom blanket equipment, and the company will be in the market for this machinery.

Cotton Cloth Wanted.

Cotton cloth for the manufacture of gloves is wanted by the American Glove & Knitting Co. of Muskogee, Okla. Correspondence relative to purchases should be addressed to W. L. Lindhard, manager.

Textile Notes.

American Glove & Knitting Co., Muskogee, Okla., has been incorporated by W. L. Lindhard, T. J. Carey and R. S. Davis.

Bibb Manufacturing Co., Columbus, Ga., is reported as to expend \$75,000 for installing electrical equipment and making other improvements.

Riverside Manufacturing Co., Castle Hayne, N. C., has been incorporated with a capital stock of \$25,000 by H. L. Vollers, D. McEachern and W. A. Mahler.

Inverness Mills, Winston-Salem, N. C., will add 24 broad looms and has let the contract for this new machinery to the Stafford Company of Readville, Mass.

Sylvan Cotton Mills Co., Shelbyville, Tenn., has increased capital stock from \$72,000 to \$90,000 and purchased 10 carloads of new machinery. It was mentioned in October as to add 2500 spindles.

Cabarrus Cotton Mills, Kannapolis, N. C., will, it is reported, build addition during 1915 to provide for growing demands. This company has 20,000 producing spindles, etc., operating on the manufacture of combed yarns.

Mt. Vernon-Woodberry Cotton Duck Co., Baltimore, now employing about 1500 operatives, is understood to have on file large contracts, secured through the J. Spencer Turner Company of New York, for khaki cloth to be shipped abroad. Six of the company's mills are producing at about 80 per cent. of capacity, several of these plants having recently been mentioned as resuming operation. It is stated that the company will soon reorganize in accordance with its plan detailed last year.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

For the Trade of France.

A. Marchis, 35 Rue Saint Marc, Paris, France, writes to the MANUFACTURERS RECORD as follows:

"I have the November number of your review, and it interests me very much. The principal aim of my firm is to act as importer into France of crude and raw products necessary for manufacturing. Do me the favor of indicating in your review that I would like to be of assistance to such of your people as want to find a market in France. I would like to act as their agent here. Our way of doing business is the following: We like people to send us samples of their goods for importation, post free, giving us the price c. i. f. at some port in France; the port we prefer is Havre. When it comes to dealing about carriages, automobiles and machinery and other heavy merchandise which represents great value, we are satisfied with catalogues and prices alone. After examining the goods, terms of sale and finding out what we can do in our market when an order is given for them, a bill of exchange calling for cash on sight will be sent, but it is understood that the prices must be low. After a beginning is made we would be willing to continue on these same terms, if possible. At this present moment we would be glad to get into commercial relation with firms manufacturing the following: Alimentary products; fish; beans; dried milk; beef tablets; bolts; iron and steel screws; tacks; nails; hospital and medical supplies; tools and machinery supplies used in small manufacturing establishments; dry goods; hosiery; shoes for soldiers; ambulance supplies and equipments; wagons; automobiles; carts; light Ford automobiles; polishing powder; emery cloth; houses in parts that can be set up and taken apart and moved to another place; tanned leather."

Flour and General Manufactures.

Herbert J. Camacho, manufacturers' representative, 137 Tower street, Kingston, Jamaica, B. W. I., writes to the MANUFACTURERS RECORD as follows:

"I may inform you that I am interested in representing manufacturers of all salable lines, and will be pleased for you to place my name before any manufacturers who are desirous of establishing business with the Island of Jamaica. In the meantime, I will be very glad if you will place my name before a few reliable flour millers of your vicinity, as I am desirous of representing the account of a first-class mill in this country."

Metric System for Latin-American Trade.

F. C. Mundhenke of New Orleans, La., suggests the advisability of using the present dullness in business to introduce the metric system in measurement. In a letter to the MANUFACTURERS RECORD he says:

"Most of the foreign countries to which we wish to increase our export trade have adopted the metric measurement; for instance, Argentine, Bolivia, Brazil, Central America, Chile, Colombia, Ecuador, Mexico, Paraguay, Venezuela, and, of course, nearly all European countries."

Cotton Oil, Paint, Rubber, Etc.

H. Montanari, 51 Rue de Paradis, Paris, France, writes to the MANUFACTURERS RECORD as follows:

"In consequence of present war I am looking out to replace a great variety of German articles, including the following: Ebonite, also called hard rubber and vulcanite, in plates, rods and tubes; pipe stems, in stylographs and office requisites; gutta-percha in very thin tissue; paints and varnishes for insulating. I want also cotton oil for sale to our African exporters."

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Edwards Steel Trucks.

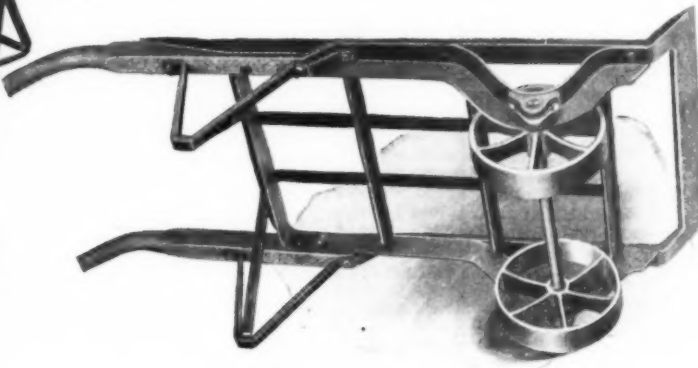
Practical experience, covering a period of over thirty years in working iron and steel, has enabled the Edwards Manufacturing Co., manufacturer of metal ceiling, roofing and shingles, portable steel buildings and cellular metal and Keyridge fireproof material, of Cincinnati, O., to develop a durable and substantial steel truck for handling heavy freight. The trucks are made in special designs for handling cotton bales, barrels, etc., together with general purpose trucks for use by railroads, steamship lines, warehouses, stores, factories, etc.

A special feature of the construction of the Edwards steel truck is the one continuous piece of "U"-shaped frame, made of angle steel, 2½ inches deep and 3/16 of an inch thick, supporting steel wheels which are inside of the body line of the truck, as shown in the larger illustration. As the frame is one continuous piece where it crosses between the handles, the upper part is said to embody rigidity and strength. The steel cross-bars of 1½x1½x3/16 inches in diameter are riveted to the "U" frame. The quick detachable wooden handles, made of straight-grain timber, steam bent, with natural finish, varnished, and reinforced

with angle iron, are in keeping with the practically indestructible construction of Edwards steel trucks.



EDWARDS COTTON TRUCK.

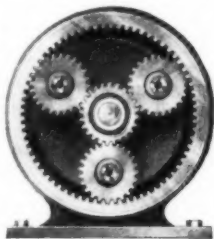


EDWARDS GENERAL-PURPOSE TRUCK.

"O. K." Speed-Reducing Transmissions.

In order to secure the best and most economical operation of machinery, especially in the use of electric power-driven machines, the D. O. James Manufacturing Co. of Chicago, manufacturer of cut gears and speed-reducing transmissions, has designed and developed the "O. K." speed-reducing transmission, which is said to meet the demands for a reliable and efficient method for reducing the motor speed without the use of chains or belts. The machines are made in a variety of sizes and speed ratios ranging from 4 to 1 for any horse-power. All moving parts, which are enclosed in an oil and dust-proof casing, travel in the same direction, and it is claimed that by taking power from three points of the king pinion, as shown in one of the accompanying illustrations, a well-balanced drive of great emergency strength, embodying "safety first" ideas, is obtained.

In general construction the device consists of a cast-iron casing designed with the center of gravity as low as possible and the feet cast solid with the casing, giving the drive rigidity and stability under running conditions. Hardened and ground steel bushings are provided for the idler gears, which revolve upon forged steel pins of generous diam-



Sectional View Showing Three-Point Drive.

eter and width of bearing. The pins are case-hardened and ground, and are fastened securely to the disc. Both high and slow speed king pinions are turned from 60 point carbon forgings. The high and low speed bearings are of the ring oiling type. A large quantity of oil is carried in the oil chamber of the casing, which, by means of a revolving ring, provides lubrication for the shaft. Oil grooves at each end of the bearing catch the oil as it drips from the shaft and return it to the oil chamber. No stuffing boxes are used, the oil being kept in the casing by a special oil groove and guard. The centrifugal force of the revolving disc throws the oil back to the outer wall of the casing, where it is caught by the oil groove and returned to the bottom of the casing to be used over.

The company states that "O. K." speed reducers are used extensively for operating large drums at very slow speeds, such as feed driers, cereal cookers, garbage driers, cement mixers, conveying and hoisting machinery, etc. In view of the fact that the gearing of the machine is entirely enclosed and operates in oil, it is claimed the de-

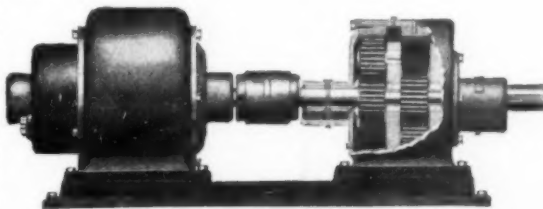
vice is especially adapted to iron and steel foundries, as well as cement mills, or in places where it is necessary to keep the gearing free from dirt and flying chips.

A 40-page bulletin giving detailed information on "O. K." speed-reducing transmissions may be obtained by addressing the Transmission Department of the D. O. James Manufacturing Co., 1120 W. Monroe street, Chicago.

Success With Small Electric Plant.

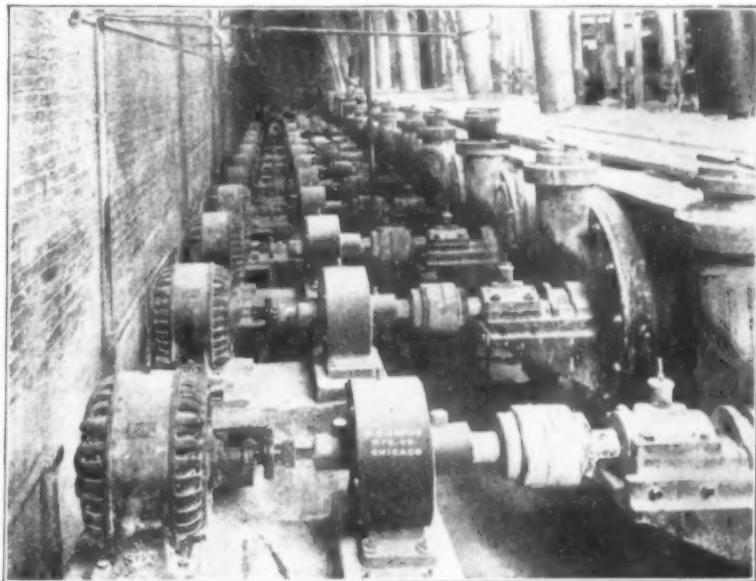
W. H. Singleton, president Singleton-Smith Company, Macon, Ga., writes to the MANUFACTURERS RECORD regarding an electric plant at Wadley, Ga.:

"We installed a plant last year at Bartow, Ga. (just four miles from Wadley), and this plant has been in operation something like nine months. With the Bartow plant we employed a hyrax-exide battery having a capacity for supplying 200 20-watt lamps for eight hours per charge. A special type of Muncie electric engine was used, embodying a commercial



MODEL "B" O. K. SPEED REDUCER.

drive pulley. The owner, Mr. LeRoy Smith, wanted this addition with the view of possibly erecting a milling plant of some kind adjacent to the electric plant, driving to a line shaft through into the mill



BATTERY OF "O. K." SPEED REDUCERS DRIVING MIXERS. REDUCING MOTOR SPEED OF 1650 R. P. M. TO 47 R. P. M.

building. The plant is unique in that the citizens enjoy a full 24-hour-per-day service, and also in that the owner has no attendants' hire charged to the plant, as due to the short hours of operation (only 2½ hours out of each 24 being necessary), his present employees in other lines of business take care of the plant. He is operating on kerosene oil, not having installed his storage tank for purchasing fuel oil in tank-car lots. The plant consumes \$30 to \$35 worth of kerosene per month, and on this basis with fuel oil should not take over \$20 at the outside.

"The Wadley plant will be just a duplicate of this plant. A Crocker-Wheeler generator is used, and of only 17½ kilowatts capacity at 125 volts. There are six different rates of charge to the battery provided in our switchboard, the object being to give the engine a full load while running. Should the outside load be heavy, the rate to battery is reduced, and vice versa. Our engine is rated at 30 horse-power. The plant on test pulled a load of 175 amperes at 120 volts. The engine walked right on with this load just as easily, apparently, as with normal load of 140 amperes. The plant distributes current one mile in each of two directions, and three-quarters of a mile in another. The only difference between the Bartow plant and the one we are erecting at Wadley will be the engine will not have the commercial pulley feature in the latter plant, being just the straight electric type.

"Mr. Smith's investment, though in a town of about 500 population, is showing him approximately 25 per cent. after allowing 6 per cent. on original investment, fuel bills and a maintenance charge taken on the whole plant at 10 per cent., which, due to the short hours of operation, is more than ample to take care of repairs and replacements."

To Represent American Manufacturers.

Morrison, selling agents, Suffolk House, Laurence Pountney Hill, London, E. C., England, write to the MANUFACTURERS RECORD as follows:

"We are inviting correspondence with a view to extending our connection by arranging to represent American manufacturers in our city, and with this object in view shall be glad if you will kindly favor us with a copy of your publication. Present abnormal circumstances offer a ready market for certain goods, and we are also arranging with our connections in Russia and France to be prepared for the additional general demands which are naturally anticipated in due course. We are open to seriously consider sound business propositions of any magnitude, and, should you be able to get us in touch with any of your friends to whom we might be of service, your courtesy would be much appreciated."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Cordova.—Walker County Comms., Jasper, Ala., will construct steel bridge across Warrior River at Cordova; cost \$25,000 to \$40,000.

Ala., Montgomery.—Montgomery and Elmore counties will construct bridge over Tallapoosa River; estimated cost \$50,000, to be divided equally between 2 counties. Address Montgomery County Comms. at Montgomery, or Elmore County Comms. at Wetumpka.

Ark., Little Rock.—Little Rock, Pine Bluff & Eastern Traction Co., E. W. Jackson, Mgr., has plans for widening and strengthening free bridge and submitted same to County Judge Joe Asher; one proposition is to widen bridge from 21-ft. to 32-ft. roadway and strengthen structure, estimated to cost \$250,000; another plan is to strengthen bridge without widening it; committee of property owners proposed that bridge be widened to 60 ft., width of Main St., which would practically require new bridge estimated to cost \$500,000; before definite action is taken, if plans are considered satisfactory by County Judge, they will be submitted to Boler, Hodge & Baird, Engrs., New York city, for approval.

Fla., Bradenton.—City will construct lift bridge; plans by Scherzer Rolling Lift Bridge Co.; Commr. of Public Works W. H. Tracy receives bids until Jan. 22. (See Machinery Wanted.)

Fla., Crystal Springs.—Crystal Springs Commongood Society voted appropriation for 2 bridges over Hillsborough River—one at west end of Main St. and one at west end of Central Ave.

Fla., Fort Lauderdale.—Dade County Comms. let contract Champion Bridge Co. of Wilmington, O., at \$22,000 to construct steel drawbridge across New River, connecting main public highway at present location of existing drawbridge; Scherzer rolling-lift double-leaf bridge; wagon driveway 15 ft. wide in clear and foot bridge on each side 6 ft. wide; carry moving load of 10 tons; draw to open so as to leave clear channel 60 ft. wide; county to contribute \$10,000, and Fort Lauderdale balance of cost; Z. T. Merritt, Clerk. (Call for bids lately noted.)

Ga., Augusta.—City let contract W. Cot-

trell at \$3300 to build bridge over canal at D'Antignac and 9th Sts.

La., Lake Charles.—Calcasieu Parish Police Jury let contract Harrison & Balm of Memphis to construct 60 small bridges and culverts over streams affected in construction of parish highway.

Miss., Leland.—Bogue Phalia Drainage Dist. Supvrs. let contract W. T. Young Bridge Co., Nashville, Tenn., at \$8923 to construct 18 steel bridges of 32 to 70-ft. span; Engr., Morgan Engineering Co., 608 Goodwyn Institute Bldg., Memphis, Tenn. (This district noted in October to construct about 45 additional bridges within next 2 years.)

Okla., Pawnee.—Pawnee County Comms. let contract Oregonia Bridge Co., Lebanon, O., and Oklahoma City, Okla., to construct steel bridge.

Tenn., Clinton.—Anderson County Quarterly Court voted to construct 3 steel bridges across Clinch River, 2 to be located at Clinton and 1 at Edgemore.

Tenn., Harriman.—Roane County Comms. are considering construction of bridge across Emory River connecting Harriman and South Harriman.

Tenn., Selmer.—McNairy County Court made appropriation for 2 steel bridges.

Tex., Austin.—City will construct reinforced concrete bridge over Shoal Creek at 10th St.; double-arch type; span of each arch, 36 ft.; width of bridge, 28 ft. between railings; cost \$4000; plans by G. S. Iredell, Engr.

Tex., Sinton.—San Patricio County Improvement Dist. No. 1 is reported to have voted \$50,000 bridge-approach construction bonds. Address County Comms.

Va., Richmond.—Hanover and Henrico County Supvrs. let contract Berkley & Schmidt of Richmond at \$3000 to construct bridge over Chickahominy River at Thomas Mill.

W. Va., Morgantown.—Monongalia County Comms. let contract Cole Bros., 16 St. Paul St., Baltimore, Md., at \$53,331 to construct reinforced concrete rib-arch bridge of 150-ft. span, with 30-ft. roadway and 8-ft. walks; work includes 140,000 lbs. deformed bars, 200,000 lbs. structural shapes, 600 ft. hand rail and 3500 cu. yds. concrete; Engrs., Monongahela Valley Engineering Co., Morgantown.

CANNING AND PACKING PLANTS

Ark., Weldon.—J. F. Bell is promoting organization of company with \$2000 capital stock to establish cannery.

La., Raceland.—Jules Godchaux is reported to establish meat-packing plant.

Md., Baltimore.—Salganik Wolf & Sons, 104 S. Exeter St., inceptd. as Consolidated Doe & Provision Co., has plans by Geo. R. Callis, 55 Knickerbocker Bldg., Baltimore, for plant at 102-4 S. Exeter St.; 50x50 ft.; concrete, brick and frame construction; slag roof; electric light; steam heat; freight elevator; cement sidewalks; bar-lock lights; will install 100-ton ice machine, refrigerating plant, sausage machines, etc.; total cost about \$20,000; bidders are: Consolidated Engineering Co., 243 Calvert Bldg.; Fred. Decker & Son, 1209 E. Biddle St.; Ideal Construction Co., Law Bldg.; West Construction Co., Knickerbocker Bldg.; Cowan Building Co., 106 W. Madison St.; J. Hy. Miller, Eutaw and McCulloh Sts.; John S. Moke, 1825 W. Baltimore St.; Singer-Pentz Co., 600 Equitable Bldg.; Chas. L. Stockhausen, National Marine Bank Bldg.; Deverell-Spencer Co., 1007 Garrett Bldg.; all of Baltimore; Lustader Construction Co., 163 W. 82d St., New York.

Tex., Brownsville.—H. S. Dew of Dewalt submitted proposition to Brownsville Chamber of Commerce to establish meat-packing plant; incorporate company with \$100,000 capital stock.

CLAYWORKING PLANTS

Ala., Decatur.—Brick and Tile.—Decatur Brick & Tile Co. will rebuild portion of plant reported burned at estimated loss of \$7000.

S. C., Hamburg.—Brick and Tile.—Rutherford & Co., capital \$60,000, inceptd.; J. A. Johnston, Prest.; T. C. McNeill, V.-P.; W. H. Burnside, Secy.-Treas.

W. Va., Martinsburg.—Bricks, Vitrified Fireproofing, etc.—Municipal Shale Brick Co., capital stock \$250,000, will be incorporated by Baltimore and Pennsylvania manufacturers; A. B. Noll, Martinsburg, now in charge; estimates final cost of buildings and equipment at nearly \$200,000; immediate expenditure about \$75,000; plans low-priced buildings at first and manufacture own material to erect other structures; steel and fireproof throughout; use electric power; build on unit system; manufacture building bricks, vitrified fireproofing, vitrified paving blocks, etc.

COAL MINES AND COKE OVENS

Ky., Ashland.—Alum Creek Block Coal Co., capital stock \$250,000, inceptd.; J. W. M. Stewart, Prest.; K. M. Fitzgerald, Secy.-Treas.; acreage not definite; machinery purchases not contemplated at present.

Ky., Hazard.—Williams & Wilson reported to lease 1000-acre coal tract on Buffalo Creek and to operate.

Ky., Viper.—Viper Coal Co., capital \$6000, inceptd. by S. P. Cook, Silas Tackett and C. K. Heatwole.

Mo., St. Louis.—Laclede Gas Light Co. let contract Robins Conveying Belt Co., New York and Chicago, for coal and coke handling equipment for new plant; let contract Joliet Bridge & Iron Co., Joliet, Ill., to furnish and erect all steel buildings and conveying bridges. (Previously noted to construct coke plant; 56 ovens; daily capacity 750 tons; 40-acre site; use Pennsylvania bituminous coal barges to St. Louis via Ohio and Mississippi rivers; plant reported to cost \$2,000,000.)

W. Va., Burnwell.—Imperial Coal Sales Co., capital \$5000, inceptd. by Quin Morton of Burnwell, W. S. Wood, Geo. S. Crouch, Jr., S. P. Richmond and Chas. Rumbaugh, all of Charleston.

W. Va., Huntington.—Guyan-New River Coal Sales Co., capital \$50,000, inceptd. by W. E. Deegans, John Faulkner, J. G. Grimet and I. A. Burgess of Mt. Hope and J. B. Hofmeier of Parkersburg.

W. Va., Logan.—Main Island Creek Coal Co., Charleston, W. Va., increased authorized capital stock from \$500,000 to \$1,000,000; will make various improvements to property on Island Creek, including new operations, 2 steel tipplers, store building to replace burned structure and 150 miners' houses at Omar; increase annual output from 50,000 to 100,000 tons.

W. Va., Logan.—Lorain Coal & Dock Co., D. P. Cary, Prest., Columbus, O., is reported to have purchased 14,000 acres Logan county

coal land and as planning extensive development.

W. Va., McWhorter.—J. S. Kleinfelter & Co., capital \$5000, inceptd. by G. G. Taylor, H. E. Nannals, Jr., H. E. Wertz and others, all of Pittsburgh, Pa.

CONCRETE AND CEMENT PLANTS

Tenn., Cumberland Gap.—Portland Cement, Cumberland Mountain Minerals Co., initial capital \$100,000, inceptd. by Victor Bentner, Henry P. Spilker, J. D. Temlin, G. W. Montgomery and Frank Montgomery; will build plant with daily capacity 3000 bbls. Portland cement; Victor Bentner can be addressed care of Lumbermen's Cement & Brick Co., Waldheim Bldg., Kansas City, Mo. (Mr. Bentner lately noted representing capitalists proposing to build this plant, etc.)

COTTONSEED-OIL MILLS

Ala., Dothan.—Farmers' Cotton Oil Co. reorganized as Planters' Cotton Oil Co. and increased capital stock from \$60,000 to \$100,000; G. H. Malone, Prest.; J. R. Faircloth, V.-P.; W. C. Falkner, Gen. Mgr.
Ga., Blakely.—Blakely Oil & Fertilizer Co. is reported to rebuild burned plant.

DRAINAGE SYSTEMS

La., Crowley.—Acadia Parish Fifth Ward Drainage Dist. No. 1 votes Feb. 2 on \$18,000 bonds to construct gravity drainage system; Ellis Hoffpauir, Prest. Comms.

La., Gonzales.—New River Drainage Dist., L. Picard, Prest., will reclaim about 60,000 acres farming land now under cultivation; dredge New River Bayou; main canal (dredged bayou) 25 mi. long; 3 laterals, each 2 mi. long; about 2,000,000 cu. yds. excavation; bids until Feb. 4; for further information address Daney & Waddill, Civil Engrs., Tulane Bldg., New Orleans. (Lately noted.)

ELECTRIC PLANTS

Ark., Gordon.—City has preliminary plans, estimates and reports on proposed electric-light plant, water-works and sewer system; estimated cost \$102,000; Engr., Albert C. Moore, Bartlett Bldg., Joplin, Mo.; R. S. Stevens, Mayor.

Ark., Leslie.—Mays Mfg. Co., J. R. Clay, Prest., organized to manufacture hubs, staves, ice and electricity. (See Woodworking Plants.)

Ark., Murfreesboro.—Williams & Freeman Water & Light Co., capital \$10,000, inceptd.; J. E. Williams, Prest.

Ark., Rison.—City will construct electric-light plant. Address The Mayor.

D. C., Washington.—Treasury Dept., O. Wenderoth, Supervising Archt., is completing plans and specifications (to be ready for delivery on or after Jan. 15) for central heating, lighting and power plant; bids may be submitted for plant building, complete, or for any one of following sections: Power plant building, complete, with steel stacks; boilers; generating apparatus; pumping equipment; condensers; coal and ash-handling apparatus; steam and water piping; switching gear; tunnels; substation apparatus, etc. (See Machinery Wanted.)

Ga., Atlanta.—Georgia School of Technology Trustees will build power laboratory contemplated last year; estimated cost \$300,000, including machinery costing \$100,000 donated by Northern corporations.

La., Winnfield.—Johnson Ice & Light Co., J. M. Johnson, Prest., will build electric-light plant. (See Ice and Cold-storage Plants.)

Mo., Fredericktown.—W. R. and Perry Patterson purchased local electric-light plant and will build ice-making and bottling plant in connection.

N. C., Lagrange.—City is reported as considering erection of electric-light plant. Address The Mayor.

Okla., Redrock.—City will not at present install electric-light plant as originally planned; lately noted. (See Water-works.)
S. C., Manning.—Manning Light & Ice Co., capital \$15,500, inceptd. by L. H. Harvin and S. Oliver O'Bryan.

Tex., Dallas.—Texas Power & Light Co. betterments in progress and to be undertaken include new plants, additional machinery, extending transmission systems, etc., costing about \$600,000. R. J. McClellan, V.-P. American Power & Light Co., New York, outlines the work as follows: Building Diesel electric plant at Paris and constructing line

to Honey Grove to connect with line between Honey Grove and Bonham; building steel tower line from switching station near Norwood to substation of Texas Traction Co.; installing 2000 K. W. turbo-generator at McKinney Station of Texas Traction Co.; at Paris building 54x84-ft. steel structure to house three 550 H. P. Diesel engines, each direct connected to 350 K. W. generator built by General Electric Co., Schenectady, N. Y.; Mosher Mfg. Co., Dallas, is contractor for Paris building, McIntosh & Seymour Corp. will erect Diesel engines, and Phoenix Construction Co. has balance of work; this station to cost about \$185,000; Paris-Bonham line to supply energy to towns between Paris and Bonham and with various substations, to cost about \$125,000; Norwood-Jenkins line, to supply energy for Texas Traction Co. system, to cost about \$50,000; for reserve capacity install at McKinney station a 2000 K. W. steam turbine now at another property of company; this line with various substation exchanges and extending line to Denison, building telephone lines from Norwood to Denison, etc., cost about \$200,000; at Denison install transformers with control apparatus, synchronous condenser, etc., costing about \$30,000; at Sherman install step-down transformers and make station changes costing about \$20,000. (Heretofore partially reported.)

Tex., Gaylord.—City is reported as contemplating construction of street-lighting system; cost \$7000. Address The Mayor.

Va., Kenbridge.—City sold to W. H. Erickson (of West Virginia) franchise for electric-light plant; purchased machinery; also establish ice factory.

W. Va., Chester.—City will install electric-light system; City Clerk reported to invite bids. Address The Mayor.

FERTILIZER FACTORIES

Ga., Blakely.—Blakely Oil & Fertilizer Co. is reported to rebuild burned plant.

FLOUR, FEED AND MEAL MILLS

Ala., Mobile.—Harris Grain Co., capital \$40,000, inceptd.; Edward Harris, Prest.; Edwin J. Donahue, V.-P. and Treas., and Geo. G. Morton, Secy.; succeeds Drago Grain Co. Okla., Billings.—Pearson & Hayton (J. C. Pearson and Wm. Hayton) will establish lately-noted flour mill; erect 20x30-ft. building; construction by company.

S. C., Columbia.—H. L. Pearce Co., capital \$10,000, inceptd. by H. L. Pearce, E. L. Galloway and E. C. Barnard.

S. C., Florence.—Dr. A. I. Baskin will build grist and meal mill; 2 stories and basement; capacity 500 bus. corn daily.

Tenn., Clarksville.—Imperial Mills inceptd. by W. J. Dickerson, E. L. Carney, L. C. Westenberg and others.

Tenn., Clinton.—A. M. Ring and Lee Scruggs will build grist mill.

Tex., Bryan.—H. T. Lawler, Sr., Jordan T. Lawler and H. T. Lawler, Jr., will build flour mill; 3 stories; mill construction; concrete foundation; storage-room for 25,000 cu. ft. wheat; daily capacity 75 bbls.; may add units of same size as needed until plant reaches daily capacity of 235 bbls.

W. Va., Elm Grove.—Geo. P. Folmar is reported to organize company to operate flour mill; purchased equipment.

FOUNDRY AND MACHINE PLANTS

Ky., Louisville.—Machinery Works.—Henry Vogt Machine Co., 1902 W. Ormsby St., will rebuild plant lately noted partially burned; construction by the company.

Md., Baltimore.—Iron Foundry.—P. Kennedy's Foundry, Jos. P. Kennedy, Prest., Charles and Wells Sts., will construct extension to plant; one building 300x100 ft., 1 story, with portion 100x100 ft., 2 stories; other buildings and materials undecided; probably brick or concrete with slag roofing; cost about \$150,000.

Mo., St. Louis.—Machinery and Supplies.—Yost & Chapman Mfg. Co., capital stock \$25,000, inceptd. by A. F. Yost, A. F. Chapman and C. S. Wesley Emig.

GAS AND OIL ENTERPRISES

Fla., Gainesville.—City is reported as considering erection of gas plant. Address The Mayor.

Fla., Lakeland.—Gas Plant.—Lakeland Gas Co. purchased site on which to build gas plant. (Noted in October to build 7 mi. pipe lines.)

N. C., Burlington.—Gas Plant.—R. F. Williams, Secy. Chamber of Commerce, is interested in locating gas plant, city to let franchise. (See Machinery Wanted.)

Okla., Ada.—Ada Oil & Gas Co., capital \$25,000, inceptd. by W. H. Skelley of Tulsa, J. S. Sankey and E. Serman of Kingling, Okla.

Okla., Bartlesville.—Buzz Oil Co., capital \$10,000, inceptd. by Chas. W. Pennell, C. A. Buzzard and A. B. Ayling.

Tex., Harbor City.—J. Garfield Buell (registered at Gunter Hotel, San Antonio) and others are reported as contemplating developing oil wells at Harbor City and Ingleside; plan to acquire 5000 acres.

W. Va., Clarksburg.—West Virginia Southern Oil & Gas Co., capital \$25,000, inceptd. by T. Roy Smith, J. L. Walton, Wm. McIntosh and others.

ICE AND COLD-STORAGE PLANTS

Ark., Leslie.—Mays Mfg. Co., J. R. Clay, Prest., organized to manufacture ice. (See Woodworking Plants.)

Fla., Bonifay.—Bonifay Water, Light & Ice Co. will build ice plant; 5 tons capacity; machinery contract not let.

Fla., Umatilla.—Umatilla Ice & Storage Co. will install 10-ton plant; officers will include P. C. Turner, Prest.; G. J. Griffin, V.-P., and F. H. Price, Secy.; upon granting of charter (late in January) will consider prices on ice and refrigerating machinery; erect 40x70-ft. brick building; lately noted. (See Machinery Wanted.)

Ky., Harrodsburg.—Harrodsburg Ice & Produce Co. increased capital from \$25,000 to \$30,000.

Mo., Fredericktown.—W. R. and Perry Patterson will build ice factory. (See Electric Plants.)

Mo., Hopkins.—Hopkins Electric Light & Ice Co., G. D. Henderson, Mgr., will build 5-ton raw-water ice factory; compressor to be operated by electric motor; let contract for machinery.

Mo., Pattonsburg.—Pattonsburg Electric Light Co. contemplates installing ice factory in connection with electric-light plant.

PROPOSAL ADVERTISEMENTS IN THIS ISSUE

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Mo., Hopkins.—H. A. Dalby will erect building and install 6-ton ice plant.

N. C., Greensboro.—Southern Ice & Coal Co., capital \$100,000, inceptd. by A. Sherrod, C. C. Walton and W. A. Sherrod.

Okla., Butler.—W. L. Todd Gin Co. will build 3-ton ice plant; let contract.

S. C., Manning.—Manning Light & Ice Co., capital \$15,500, inceptd. by L. H. Harvin and S. Oliver O'Bryan.

Tex., Bartlett.—Braun & Zanders, Proprs. Bartlett Works, will build ice plant.

Tex., Corsicana.—Management State Orphans' Home requested appropriation of \$60,000 to build dining hall storage-rooms and refrigerating and ice plant.

Tex., Dallas.—Oak Lawn Ice & Fuel Co. will build ice-storage vaults at 3307 Lemmon St. to cost \$5000; brick and reinforced concrete; all material and labor contracted; ice-making capacity 65 tons daily.

Tex., Groesbeck.—B. H. Marks and others organized company with 20,000 capital to establish ice factory of 10 tons daily capacity, creamery and bottling plant. (Lately noted.)

Tex., Houston.—Eureka Ice Co. will erect building to cost \$3000.

Tex., Houston.—Houston Ice & Brewing Co. will build addition to warehouse; reinforced concrete; 2 stories and basement; cost \$8000.

Va., Kenbridge.—W. H. Erickson of West Virginia will establish ice factory in connection with electric-light plant. (See Electric Plants.)

W. Va., Bluefield.—John Husband & Bro. acquired plant of Bluefield Brewing Co., which is equipped with 100-ton refrigerating plant and 25-ton ice-making system; will install additional ice tanks to double capacity.

W. Va., Weston.—Weston Electric Light, Power & Water Co. is reported as having plans for 2-story concrete fireproof addition to ice plant.

LAND DEVELOPMENTS

Ala., Mobile.—Duggan-Taylor Realty Co., capital \$100,000, inceptd.; Jas. T. Duggan, Prest.; Thos. M. Moore, V.-P.; J. Leslie Taylor, Secy.

Fla., Fort Myers.—Fort Myers Grapefruit Co., capital stock \$57,000, inceptd.; John R. Galloway, Prest. (813 H St. N. W.) and Geo. H. Judd, V.-P., both of Washington, D. C.; Thos. M. Duckett, Secy., Asheville, N. C.; Abraham L. Helmick, Treas., Thomas, W. Va.

Fla., Jacksonville.—Elarbee Improvement Co. increased capital stock from \$5000 to \$20,000.

Fla., St. Petersburg.—Fivay Improvement Co. (W. L. Sonntag of St. Paul, Minn., and others) is reported as contemplating improvements at Fivay (resort) to include hard roads, streets and sidewalks, electric, gas and telephone systems, 9-hole golf course, 100-room hotel with clubhouse, and gasoline railroad to connect Fivay and Tarpon Springs; estimated total cost \$100,000.

Ky., Bethel.—Longview Cemetery Co., capital \$25,000, inceptd. by J. L. McAllister, Leo O. Vanarsdall, John J. Smoot and Geo. W. Wilson.

N. C., Asheville.—John A. Campbell and others purchased 400 acres timber land and will develop as orchard after timber is cut. (See Lumber Manufacturing.)

N. C., Raeford.—Ashley Bros., Glens Falls, N. Y.; A. G. Johnson (care of Bion H. Butler, Valhalla Farm, Southern Pines, N. C.) and others will develop 5000-acre tract as tobacco farms; one large and a number of smaller farms, latter probably about 50 acres each; surveyors now locating boundaries; railroad station to be built and called Ashley Heights,

this being proposed center for school and farm buildings, etc.; farmhouses to be equipped with water, electric light and sewer systems; contemplates installation of community system water-works and an electric-light plant.

Tex., San Antonio.—Mexican Realty & Farm Land Co., capital stock \$25,000, inceptd. by J. A. Parsons, T. G. Jackson and Wm. W. Neunhoffer.

Va., Grundy.—Buchanan Golden Seal Co., capital \$10,000, inceptd.; John H. Matney, Prest., Grundy; H. A. Compton, Secy., Whitewood, Va.

LUMBER MANUFACTURING

Arkansas.—Columbia Hardwood Lumber Co., 2048 Dominick St., Chicago, Ill., purchased Pemiscot Lumber Co. properties, including 2500 acres timber land, 2 sawmills, tram road, etc.; probably will organize Columbia Hardwood Lumber Co. of Arkansas to continue developments.

Ark., Harrison.—Greener Lumber Co., capital \$6000, inceptd.; H. W. Putnam, Prest.

Ky., Mayking.—Cocburn Lumber Co. organized with L. F. Jackson, Prest. and Mgr.; Bill Chapman, V.-P.; L. N. Nodde, Secy.-Treas.; will erect building of mill construction; open building proposals Feb. 1; install lath and dimension mill for cutting dimension lumber; equipment purchased. (Mr. Jackson and others lately noted to install planing mill.)

La., Alexandria.—W. B. MacDavid, Inc., chartered with \$50,000 capital stock by Ferd. Brenner, R. C. Witbeck and others.

Md., Cumberland.—Harrison Bros. will build planing mill; main building 2 stories, 28x75 ft.; install planers, band and circular saws, turning lathes, headers and boring machines.

Mo., Campbell.—Woodall Lumber Co., capital \$15,000, inceptd. by O. A. McFarland, J. S. Woodall and Othar McFarland.

N. C., Asheville.—John A. Campbell and others purchased 400 acres timber land on

Gooch's Peak and Bald's Mountain; incorporate company and undertake development; build 2 sawmills; develop as orchard after timber is cut; plant apple trees as rapidly as tracts are cleared. (This property was purchased from Jas. G. Stikleather, who acquired same as recently stated.)

S. C., Fechtig.—W. T. Cummings Lumber Co., capital stock \$50,000, inceptd. by W. F. Cummings and E. P. Carter.

Tenn., Jonesboro.—Appalachian Lumber Co., capital \$50,000, inceptd. by J. M. Buck, Jr., W. K. Buck, Geo. C. Sells and others.

METAL-WORKING PLANTS

Ky., Newport.—Culverts, Tanks, etc.—Newport Culvert Co. (lately noted inceptd., capital \$25,000) organized; J. B. Andrews, Prest.; Jos. G. Andrews, V.-P.; Frank A. Moeschl, Secy.-Treas.; W. H. D. Wheat, Mgr.; will manufacture open hearth iron culverts, tanks, troughs, wagon tanks, etc.

La., Winnfield.—Johnson Ice & Light Co., J. M. Johnson, Prest., will build ice and electric plant; former to have daily capacity of about 10 tons. (Lately noted inceptd. with \$8000 capital stock.)

Tenn., Chattanooga.—Enamel Ware, etc.—Chattanooga Stamping & Enamelling Co., capital stock \$200,000, inceptd. by Wm. Lipphardt (Prest.), J. T. Arnold, James M. Trimble, C. H. Huston and Francis Martin; let between \$75,000 and \$100,000 building contract to Mark K. Wilson, who let subcontracts as follows: To C. D. Haynes, brick work; Mountain City Stone Co., sheet-metal work; Johns-Manville Co., roofing; Sloan & Co., steel sash; C. E. Smith, stone work; Willingham Lumber Co., woodwork and lumber; all of Chattanooga. Has plans and specifications by W. H. Sears, Archt., Chattanooga, to construct plant to manufacture enameled sheet steel and iron products, etc.; first building 100x300 ft., 1 story, of brick and concrete construction, with steel sash, fire-sprinkler equipment, vacuum steam heating system with 100 H. P. boiler, electric light and power, individual electric drive, etc.; ordered architect to prepare plans for 3 wings to be constructed later; plant site has river frontage 450 ft.; Tennessee Power Co. will furnish electricity for power. (Lately noted to be inceptd. with \$200,000 capital stock, etc.)

Tex., Houston.—Brass Castings.—National Brass Co., Southern Pacific Bldg. (lately noted inceptd., capital stock \$20,000), has 3 furnaces now in operation; contemplates erection of additional machine-shop building in spring; principal present product car and engine brass castings; G. F. Cotter, Prest.; J. W. Cain, V.-P., Treas. and Mgr.; F. H. Littrell, Secy.

MINING

Ark., Cotter.—Zinc.—E. B. Griswold will develop zinc mines.

Ky., Paducah.—Iron.—Tennessee Iron Mining Co., capital \$6100, inceptd. by Sam L. Levy and others.

La., Sulphur.—Sulphur.—United Sulphur & Oil Co., 923 Maison Blanche, New Orleans, has arranged for development of one tract; drilling operations by Investors' Sulphur & Oil Co.; arranging for sale 3 additional tracts, drilling to begin about July 1.

Mo., Joplin.—Lead and Zinc.—Liberty Bell Mining Co., capital stock \$4000, inceptd. by Gus Pearl, David Pearl, Mayer Mischkin and U. W. Burris.

Mo., Joplin.—Lead and Zinc.—L. C. Turner, M. W. Brockman, J. O. Lewis and others organized company; will develop mine owned by city on Fairview cemetery land; build concentrating plant.

Mo., Springfield.—Lead and Zinc.—Little Judge Mining Co., capital \$2000, inceptd. by N. A. Lowe, F. C. Mann and M. E. Boyd.

Mo., Webb City.—Lead and Zinc.—Hurricane Mining Co., capital \$15,000, inceptd. by P. J. Hanlon, Jas. C. Kirwan and J. J. McClellan.

Mo., Webb City.—Lead and Zinc.—Orange Mining & Milling Co., capital \$30,000, inceptd. by F. C. Wallover, Ed. James and M. Van Sieten.

Va., Bristol.—Federal Mining Corp., capital stock \$50,000, chartered; H. E. Graves, Prest.; S. W. Fullerton, Secy.-Treas.

Va., Concord, R. F. D.—Manganese.—Oxford Mining & Manganese Corp., 1516 Commonwealth Trust Bldg., Philadelphia, Pa., Howard Longstreth, Prest., and Geo. Breed, V.-P., both of Philadelphia, will develop about 1400 acres; present output 25 to 50 tons daily; contemplates increase to 100 to

200 tons; property fully equipped. (Previously noted.)

Va., Ellett-Lime.—Lamar Lester and Mr. Wright will incorporate company to manufacture agricultural and building lime; purchased lime-rock quarries and will develop.

MISCELLANEOUS CONSTRUCTION

Ala., Decatur.—Wharf.—City Council authorized purchase of land on Tennessee River as site for wharf; Jas. A. Nelson, Mayor.

Fla., St. Petersburg.—Freight Pier.—City will build freight pier in Bayboro Basin; M. W. Spencer, City Engr.

Fla., St. Petersburg.—Jetty.—Government let contract Edwards Construction Co., Tampa, to construct jetty at entrance to Bayboro freight harbor; length about 900 ft.; \$10,000 available; W. B. Ladue, Major, Engrs., Jacksonville. (Lately noted.)

Fla., Winter Haven.—Twenty Lakes Boat Course Club, Lycurgus Burns, Prest., engaged Lawrence Manning of Atlantic Engineering Co., Savannah, Ga., to survey, make plans for and superintend construction of lately-noted motor-boat course; aggregate length 3 mi.; canals 20 ft. wide; depth for 4 ft. of water; 3 locks; ask bids in about 2 weeks; boat course around lakes to be about 100 mi., connecting following cities, villages and resorts: Winter Haven, Florence Villa, Eloise, Lake Alfred, Lucerne Park, Poinsettia Park, Hamilton and Dundee.

Md., Baltimore.—Ventilating System.—City let contract Walter E. Hill & Co., 203 N. Liberty St., at \$14,726, to install ventilating system at Bayview Asylum.

Miss., Clarksdale.—Levee.—Yazoo and Delta Levee Board let contract Bondurant, Clark & Co. of Natchez to construct 2,000,000 cu. ft. levee work in Clarksdale Dist.

N. C., Wilmington.—Breakwater.—Maj. H. W. Stickle, U. S. Dist. Engr., opened bids Jan. 5 for construction breakwater at Cape Lookout; length to be 700 ft., deposited in water up to 42 ft. deep; specifications estimate 1,221,700 tons stone for breakwater proper and 8300 tons for shore connection required; \$1,400,000 available to begin work; \$3,526,600 total estimated cost; each bidder required to submit proposal for entire construction and for work under amount now available; lowest bidders, D. L. Taylor & Co., Medina, N. Y., at \$1,073,358 and \$2,435,400. (Lately noted call for bids.)

Tex., Houston.—Retaining Walls.—City will construct retaining walls on Louisiana St. between Texas and Prairie Aves.; bids at office City Secy. until Jan. 18; Ben Campbell, Mayor. (See Machinery Wanted.)

Va., Tye River.—Tunnel, etc.—Virginia Blue Ridge R. R. Co., A. K. Murrell, Ch. Engr., will construct 500-ft. standard-size tunnel in connection with proposed 18-mi. railroad line; also erect trestles, requiring 700,000 ft. lumber.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Stockyards.—Southern Stockyards Co., capital stock \$3000, inceptd.; A. G. Donahoe, Prest.; A. E. McClure, Secy.-Treas.; J. A. Pate, Gen. Mgr.

Ala., Mobile.—Printing.—Universal Printing Co., capital \$5000, inceptd.; G. H. Krumpel, Prest.; Mrs. Agnes Brunnier, V.-P.; Emil A. Brunnier, Secy.-Treas.

Ga., Savannah.—Engraving.—Commercial Engraving Co., capital \$10,000, inceptd. by M. E. Brown and F. M. Denning.

Miss., Hattiesburg.—G. P. Smith, Mgr. Phoenix Laundry, will install dry-cleaning system in laundry; cost about \$1500; ordered equipment.

Mo., Joplin.—Garbage Incinerator.—J. Fricke of St. Louis is reported as contemplating erection of garbage incinerator.

Mo., St. Louis.—Cloth Sponging, etc.—Manhattan Sponging Works, capital stock \$10,000, inceptd. by Israel Korach, Alex. L. Jacobs and Louis F. Korach.

N. C., Charlotte.—Chemical Construction.—Chemical Construction Co., capital stock \$10,000, inceptd.; T. C. Oliver, Gen. Mgr.; will undertake to design and construct chemical plants, etc.; methods of construction include acid-proof brick set in acid-proof cement, eliminating lead casing or lining.

N. C., Charlotte.—Dyeing and Cleaning.—Ben Vonde Co. will rebuild dyeing and cleaning plant at 18 W. 5th St., reported burned, and add new department designed especially for fancy laundering; temporary offices at 15 W. 5th St.; burned structure was owned by Dr. E. Reid Russell of Asheville, N. C.

Okla., Oklahoma City.—Typewriters.—Okla-

homa Typewriter Sales Co., 201 State National Bank Bldg. (lately noted inceptd., capital stock \$2000), will equip mechanical department for overhauling typewriters; purchase factory rebuilt typewriters, handle office appliances and supplies; Jno. D. E. Roaz, Prest. and Gen. Mgr.; M. G. Meister, 507 Patterson Bldg., Secy.-Treas.

S. C., Columbia.—Electric Protection.—Electric Protection Co., capital stock \$5000, incorporated by B. F. Taylor, Willie Jones, Jos. Norwood and others.

Tenn., Chattanooga.—Paving Contracting.—Gulf Paving Co., capital \$25,000, inceptd. by Bruce M. Redmon, A. C. Collicott, D. S. Zachery and others.

Tenn., Memphis.—Construction.—Realty Construction Co., capital \$10,000, inceptd. by J. H. Worden, W. R. Ferguson, H. M. Callcott and others.

Tenn., Memphis.—Construction.—Realty Construction Co., capital \$10,000, inceptd. by J. H. Worden, W. R. Ferguson, H. M. Callcott and others.

Tex., Galveston.—Grain Elevator.—Southern Pacific Terminal Co. let contract James Stewart & Co., Houston, Tex., and St. Louis, Mo., for grain elevator structure costing about \$500,000; concrete fireproof construction; 48 circular tanks partially independent of each other, capacity 674,000 bus.; each tank 98 ft. high by 15½ ft. diam.; 35 interstice tanks (between larger tanks) with capacity 117,500 bus.; 22 bins (forming part of workhouse) with capacity 212,100 bus.; total capacity 1,003,600 bus.; 98x48-ft. workhouse; 96x74-ft. track shed with 4 tracks; Southern Pacific Co. building elevator foundations under direction H. F. Jones, Constr. Engr., Galveston; 4500 pilings, each 40 ft. long, required for foundations; on latter will be laid concrete slab composed of 15,000 yds. crushed rock, 14,000 wheelbarrows cement and 6000 yds. sand. Elevator mechanical equipment will include electric power, silent chain drives, telephone system, passenger elevators, automatic dust collectors, automatic sprinklers, sackers, machine shovels, drays, electric signals, etc. (Lately noted to rebuild burned elevator, etc.)

Tex., Port Arthur.—Cattle.—Port Arthur Cattle Co., capital stock \$10,000, inceptd. by J. B. Peel, J. A. Young and C. Gentz.

Va., Charlottesville.—Plumbing.—R. L. Thomas Co., capital \$15,000, inceptd.; R. L. Thomas, Prest.; G. M. McNutt, Secy.

Va., Petersburg.—Hardware.—Jas. Y. Branch, capital stock \$15,000, inceptd.; Jas. Y. Branch, Prest.; V. P. Beachy, Secy.-Treas.

Va., Roanoke.—Contracting.—Kennard-Pace Co., capital \$25,000, inceptd.; A. J. Kennard, Prest.; J. L. Pace, Secy.-Treas.

W. Va., Grafton.—Photography.—W. R. Loar & Co., capital stock \$25,000, inceptd. by W. R. Loar, Paul O. Potter, R. E. Bulsford and others.

W. Va., Huntington.—Oil and Gas Well Contracting.—Weiler Bros., capital stock \$10,000, inceptd. by Wm. J. Weiler, Jos. G. Weiler, Geo. J. Weiler and others.

W. Va., Mount Hope.—Construction.—Rodgers Construction Co., capital \$10,000, inceptd. by A. W. Rodgers, L. E. Rodgers, John Faulkner and others.

MISCELLANEOUS FACTORIES

Ala., Mobile.—Ice-Cream and Creamery.—Mobile Ice-Cream & Creamery Co., capital stock \$4000, inceptd.; Frank F. Forrest, Prest.; Ruby E. Boe, V.-P.; Ingeman Boe, Secy.-Treas.

Ala., Montgomery.—Mechanical Device.—Stephens Mechanical Movement Co., capital stock \$5000, inceptd.; W. F. Stephens, Gen. Mgr.

Ala., Selma.—Cane Syrup.—N. A. Gilbert, 56 N. Royal St., Mobile, contemplates building cane-syrup factory capable of handling product of about 1000 acres cane.

Fla., Pensacola.—Coffee.—Gulf City Coffee Co., capital stock \$10,000, inceptd.; Frank E. Welles, Prest.; Vincent J. Vidal, V.-P.; W. V. Cole, Secy.-Treas.

Ky., Ashland.—Lamps.—Universal Lamp Co., capital \$10,000, inceptd. by Robt. Adonis Mahan, J. Roe Young and B. F. Staton.

Ky., Lexington.—Bottling.—Cher-A-Coca Bottling Co., capital \$10,000, inceptd. by J. D. Yarrington, C. Y. Freeman, J. D. Kiser and others.

Ky., Louisville.—Paint.—J. F. Kurfees Paint Co. will open bids Jan. 11 for construction of lately-noted building; 4-story-and-basement fireproof structure; cost about \$50,000. (Lately noted having plans prepared by Joseph & Joseph, Louisville.)

Ky., Louisville.—Confections, Pharmaceutical Products, etc.—Commercial Laboratories,

capital stock \$100,000, inceptd. with B. B. Bales, Prest., and F. K. Gardner, V.-P. and Gen. Mgr.; will manufacture its products at Geo. Gould Laboratory on E. Main St.; main offices, 911 Inter-Southern Bldg.

Ky., Paducah.—Food Products.—McKinney-Guedry Co., capital stock \$25,000, inceptd. by R. W. McKinney, T. P. Guedry, H. C. Elliott and others.

Md., Baltimore.—Jos. E. Watkins has plans by Haskell Barnes, 301 Charles St., Baltimore, for factory building at Paca and Mulberry Sts.; 18x60 ft.; brick and wood; tin roof; gas and electric light; freight elevator; cost about \$14,000; bidders are Morrow Bros., Fidelity Bldg.; J. E. Marshall & Sons, 121 Mercer St.; John Waters, 23 Center St., and Wm' Ferguson & Bro., 214 Clay St., all of Baltimore; bids due Jan. 14.

Md., Smithsburg.—Brooms.—Smithsburg Broom Works, capital stock \$5000, inceptd. by Robt. P. Schamel, G. Elmer Ridenour and Harvey R. Spessard.

Mo., Fredericktown.—Bottling.—W. R. and Perry Patterson will build bottling plant. (See Electric Plants.)

Mo., St. Louis.—Clothing.—Moss-Strauss Mfg. Co., capital stock \$33,000, inceptd. by Benjamin J. Strauss, Herman Y. Moss, Sidney B. Blumenau and others.

Mo., St. Louis.—Yost & Chapman Mfg. Co., capital \$25,000, inceptd. by A. F. Yost, A. F. Chapman and C. S. Wesley Engr.

Mo., St. Louis.—Skirts.—H. Kessler Skirt Co., capital stock \$15,000, inceptd. by Edward Kessler, Hyman Kessler, Alex. Weinstein and others.

N. C., Andrews.—Chemicals.—Cherokee Chemical Co., capital \$100,000, will be inceptd. with Robt. Hancock, Gen. Mgr., Asheville, N. C.; build plant costing \$10,000 to manufacture chemicals from roots, etc.

Okla., Sapulpa.—Ice-cream.—L. F. Strang of Topeka, Kans., is reported as contemplating erection of ice-cream factory.

Tenn., Bristol.—Board of Trade is negotiating with capitalists who contemplate establishing manufacturing industry to represent investment of \$500,000; no further facts now available.

Tenn., Chapel Hill.—Creamery.—Company has been inceptd. with \$400 capital stock by F. H. Ezell, W. T. Hurt, S. J. Blackwell and others.

Tenn., Chattanooga.—Shovels.—American Mfg. Co., manufacturer of harness and saddlery, hardware, etc., will install equipment for daily capacity 100 doz. shovels, including their handles; has purchased this machinery; built addition to present concrete factory building, increasing floor space to about three-quarters of an acre to provide for shovel department.

Tenn., Clarksville.—Aprons.—Monarch Mfg. Co. of Nashville is reported as contemplating establishment of women's apron factory.

Tenn., Jellico.—Clothing.—Jellico Clothing Mfg. Co. will add 16 new machines.

Tenn., Jellico.—Grocers' and Druggists' Sundries.—Davis Mfg. Co. let contract Reynold Perkins to erect lately-noted 30x100-ft. brick building; install weighing, sealing and packing machinery; G. C. Davis, Prest. and Mgr.; Clyde W. Jones, Secy.; C. E. Ellison, Treas. (Lately noted.)

Tex., Groesbeck.—Creamery and Bottling.—B. H. Marks and others organized company with \$20,000 capital to establish creamery and bottling plant and ice factory of about 10 tons daily capacity. (Lately noted.)

Tenn., Harriman.—Granite and Marble.—Harriman Granite and Marble Works will erect factory building.

Tex., Houston.—Peanut Products.—Monarch Milling Co., capital stock \$10,000, inceptd.; will install mill to manufacture peanut butter, oil, peanut stock feed, etc.; daily capacity 1000 bus.; L. R. Street, Prest.; H. C. Schirmer, V.-P.; Dan C. Smith, Jr., Secy.-Treas.

Tex., Palestine.—Bakery.—F. F. Ellenberger, Prest. American Home Bakery, is reported to erect 2-story brick bakery building.

Va., Norfolk.—Fruit Juices.—Garrett's Corporation, capital \$25,000, chartered; Paul Garrett, Prest.; C. B. Cole, Secy.-Treas.

Va., Norfolk.—Hardware.—Garrett-Chase Mfg. Co., capital \$50,000, inceptd.; Paul Garrett, Prest.; E. B. Cole, Secy.-Treas.

Va., Richmond.—Stock Remedy.—Virginia Stock Remedy Corp., capital stock \$10,000, chartered; W. C. Ferebee, Prest.; L. L. Scherer, Secy.-Treas.

W. Va., Charleston.—Violins.—American Violin Co., capital \$10,000, inceptd. by N. P. Perkins, J. B. Jones, R. A. McKee and others; will build plant to manufacture violins.

W. Va., Pennsboro.—Glass.—Premier Glass Co. (Harry T. Wilson of Clarksburg, W. Va., and others) is reported to build glass plant to cost \$65,000.

W. Va., Salem.—Window Glass.—Alliance Window Glass Co., capital \$75,000, inceptd. by Hector Requoy, Jos. La Baire, Jos. Henrisse and others.

W. Va., Wheeling.—Enameled Bathtubs, etc. Wheeling Sanitary Mfg. Co., 4th St., increased capital stock from \$250,000 to \$750,000; contemplates no new construction at present. (Lately incorrectly noted as increasing capital from \$25,000 to \$75,000.)

MOTORS AND GARAGES

Ala., Montgomery.—Automobiles.—Thompson Motor Car Co., capital stock \$2000, incorporated; D. E. Thompson, Prest. and Gen. Mgr.; Mrs. Meta H. Thompson, V.-P.; J. F. Foster, Secy.-Treas.

D. C., Washington.—Garage.—Jno. F. Weirick, 467 Northern, will erect addition to public garage at rear 1823 Lincoln Ave.; 65x5 ft.; brick; slag roof; electric light; cost \$4350.

Fla., St. Petersburg.—Automobile Parts.—Amesbury Mfg. Co., Amesbury, Mass., is reported as planning to establish plant to manufacture automobile bodies.

Md., Salisbury.—Garage.—L. W. Wimbrough has plans for garage and stables. (See Buildings Proposed, Miscellaneous.)

Mo., Chillicothe.—Automobiles and Supplies.—Adams Automobile & Supply Co., capital stock \$10,000, inceptd. by C. F. Adams, Theo. J. Grother and A. J. Cole.

Mo., St. Louis.—Automobiles.—Russell E. Gardner, Prest., Banner Automobile Co., is reported as contemplating establishment of automobile factory.

N. C., Newbern.—Automobiles.—Newbern Ford Co., capital stock \$50,000, inceptd. by J. V. Blades, B. B. Hurst and T. G. Hyman.

Va., Pulaski.—Garage.—Pulaski Motor Car Co. let contract Hoback & Hufford to build addition to garage 25x110 ft. to be used as machine shop; total floor space to be 11,000 sq. ft.

W. Va., Moundsville.—Garage.—H. W. Perkins purchased site on which to build garage and machine shop; 70x110 ft.; brick; glass front.

W. Va., Moundsville.—H. W. Perkins will build garage; 70x110 ft.; brick; glass front; furnace heat; repair shop in rear; capacity for 75 to 100 cars.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

W. Va., Cameron.—Baltimore & Ohio R. R., F. L. Stuart, Ch. Engr., Baltimore, Md., plans to rebuild shops.

ROAD AND STREET WORK

Ala., Jasper.—Walker county will improve roads to connect with Jefferson county roads. Address County Comms.

Ark., Devall Bluff.—Prairie County Road Improvement Dist. No. 1 will construct roads; sold \$60,000 bonds. Address County Comms.

Ark., Helena.—City (lately noted to pave additional streets) has received bids for all work contemplated at present; some other street work proposed, but nothing definite. Address The Mayor.

Ark., Little Rock.—City will grade, pave, place reinforced concrete hand rail, construct curbing, sidewalks and street-car tracks on W. 3d St. viaduct; Board of Affairs, Chas. E. Taylor, Prest., invites bids until Jan. 21. (See Machinery Wanted.)

Fla., Clearwater.—City will expend about \$40,000 to pave streets; R. T. Daniel, City Clerk; J. N. Drew, City Engr. (Reported in October to have voted \$15,000 bonds.)

Fla., De Land.—Volusia county is reported to vote on \$50,000 bonds to construct roads. Address County Comms.

Fla., Eustis.—City votes Feb. 2 on \$35,000 bonds for paving and storm sewers; I. N. Kennedy, Mayor.

Fla., Fort Pierce.—St. Lucie County Commissioners let contract J. G. Coats & Co., Fort Pierce, to complete \$14,000 contract on road south from Fort Pierce; county to furnish shell.

Fla., Miami.—Dade County Comms. are reported as contemplating ordering \$100,000 bonds to oil main highway from Palm Beach county line south to end of road to Detroit; Z. T. Merritt, Clerk of Board.

Fla., St. Petersburg.—Flay Improvement Co. (W. L. Sonntag of St. Paul, Minn., and

others) is reported as contemplating construction of hard roads, streets and sidewalks at Pivay. (See Land Developments.)

Fla., Tampa.—City let contracts to pave 25 streets, aggregating 78,365 sq. yds.; Georgia Engineering Co. of Augusta, Ga., for 23 streets, and Edwards Construction Co. of Tampa for 2 streets; granite curbing; R. D. Martin, City Engr. (Call for bids lately noted.)

Fla., Titusville.—City let contract Benj. Akerman, Titusville, at \$513.62 for road work, and \$900 additional for 385 ft. 24-in. terra-cotta storm sewer. (Lately noted.)

Ga., Atlanta.—W. S. Gilbreath, Secy. Hoosier Motor Club of Indianapolis, Ind., plans organization to construct "Hoosierland-to-Dixie" highway from Chicago to Jacksonville; extend through Illinois, Indiana, Kentucky, Tennessee, Georgia and Florida; reported that \$50,000 will be donated in addition to furnishing engineering survey for section from Signal Point, near Chattanooga, 60 mi. northward to Crossville, Tenn.

Ga., Macon.—City votes Mch. 9 on \$120,000 bonds to pave streets; J. J. Gaillard, City Engr. (Lately noted.)

Ga., Quitman.—City is reported to have let contract Gulf Paving Co. (Bruce M. Redmon and others), Chattanooga, Tenn., to pave streets with asphalt.

Ga., Savannah.—City will construct asphalt block, granite block and brick pavements; \$120,000 available; material to be advertised and purchased from time to time; E. B. Conant, Ch. Engr. (Lately noted.)

Ky., Barbourville.—Knox county votes Mch. 6 on \$200,000 bonds to construct roads. Address County Commrs. (Lately noted.)

La., Alexandria.—City Commrs. let contract Galley & Clark to resurface 3d St. from Elliott to Bellier St. with bitulith.

Md., Baltimore.—City let contract Baltimore Asphalt Block & Tile Co., Monroe and Lorman Sts., for repairs to sheet-asphalt pavements and for supplying asphalt blocks during year.

Md., Baltimore.—City will pave with vitrified block and granite block paving, contract No. 102, and sheet asphalt, vitrified block and granite block paving, contracts Nos. 103, 104 and 105; bids by Board of Awards at City Hall until Jan. 20; specifications, etc., at office of Paving Com., R. Keith Compton, Chrmn. and Consult. Engr., City Hall. (See Machinery Wanted.)

Md., Baltimore.—Maryland State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., will build section State highway, about 2.69 mi., from Linkwood to Mt. Holly, Dorchester county; bids until Jan. 19. (See Machinery Wanted.)

Md., Hagerstown.—State Roads Com., Garrett Bldg., Baltimore, let contract Juniata Paving Co. of Philadelphia, Pa., at \$7524.22 to macadamize road through Boonsboro, .76 mi., contract No. W-12, and to S. A. Hollinger of Clear Spring at \$646.30 to macadamize road through Clear Spring, .45 mi.

Miss., Magnolia.—Pike County Commrs. sold \$100,000 road bonds.

Mo., Chillicothe.—City will repave section of S. Locust St. Address The Mayor.

Mo., Independence.—Jackson County Commissioners let contract Davidson Construction Co. of Kansas City at \$13,987 to grade and drain Blue Mills and Sibley Rd., 6 mi.

Mo., Independence.—Jackson County Commissioners approved contract let to Moore Construction Co. of Kansas City at \$29,784 to widen, macadamize and drain about 4 mi. Oak Grove and Mehlun Rd.; A. L. Cooper, County Counselor.

Mo., Kansas City.—City let contract Tyner Construction Co. at \$10,207 to pave 27th St. from Lister to Van Brunt St. with concrete.

Mo., Kansas City.—City will construct sidewalks on Main St. from 13th to 18th St. Address Board of Public Works.

Mo., Kansas City.—City let contract Standard Sidewalk Construction Co. at \$3360 to construct 24,000 ft. sidewalk on Forest Ave. from 55th to 59th St.

Mo., Potosi.—Washington County Potosi Special Road Dist. (J. F. Evans and others, Commrs.) will construct roadbed and hard-road surface within district containing 49 sq. mi.; surveys and estimates not completed; materials adjoining roads to be improved; date for opening bids not decided; work may be done by force account; \$25,000 bond issue and probable additional funds totaling \$30,000 available; Engr., W. R. Hengler; lately noted. (See Machinery Wanted.)

N. C., Lenoir.—City is reported as considering street paving. Address The Mayor.

N. C., Yadkinville.—Yadkin county will probably vote on \$200,000 bonds to construct

sand-clay roads. Address County Commrs. (Lately noted.)

N. C., Wilmington.—New Hanover County Commrs. will construct road to Carolina Beach; Wilmington Beach Corp., New Hanover Transit Co. and Kure Land & Development Co. will pay one-half of cost.

Tenn., Blountville.—Sullivan County Commissioners will ask for new law whereby \$100,000 additional bonds may be issued to complete unfinished links in highway system; if this issue is authorized, county will have expended total of \$600,000.

Tenn., Chattanooga.—Hamilton County Road Com. let contract Noll Construction Co. of Chattanooga at \$12,513.28 to pave Main Ave., North Chattanooga, with asphalt macadam on bituminous concrete base; \$12,455.72 remains from fund available, which will probably be used to complete storm sewer, part of Main Ave. plant. (Lately noted.)

Tenn., Clinton.—Anderson County Quarterly Court voted issuance of \$40,000 of bonds to complete road work on Oliver Springs and New River Pike.

Tenn., Jacksboro.—Campbell County Commissioners voted to issue \$150,000 bonds to construct and repair roads; expend \$100,000 to construct road between Jellico and Habersham, \$5000 for road between Newcomb and Elk Valley, \$3000 on road between Jellico and Newcomb, \$2000 to repair road between Jellico and Highfill, and balance of issue for new roads in Powell Valley.

Tenn., Maryville.—Blount county will vote on \$300,000 bonds to construct roads. Address County Commrs.

Tenn., Wartburg.—Morgan County Commrs. let contract Oliver & Hill Construction Co. of Maryville and Solomon Construction Co. of Harriman to macadamize 80 mi. road; grading completed; \$270,000 bonds available. (Call for bids lately noted.)

Tex., Anderson.—Grimes County Road Dist. No. 3, Reid Rikart, County Judge, defeated lately-noted \$30,000 bonds for road construction.

Tex., Anderson.—Grimes County Road Dist. No. 4, Reid Rikard, County Judge, defeated lately-noted \$90,000 bonds for road construction.

Tex., Corpus Christi.—City votes Feb. 5 on \$100,000 bonds to pay city's one-quarter pro rata for additional paving. Address The Mayor.

Tex., Corsicana.—City will pave 2d Ave. Address Mayor Halbert.

Tex., Fort Worth.—City will pave W. 10th St. from intersection with Monroe St.; width 40 ft.; contain about 1650 sq. yds.; material to be bitulithic, rock asphalt or vitrified brick; P. J. Von Zuben, City Engr., receives bids until Jan. 19. J. H. Grant, Commr. of Streets and Public Property. (See Machinery Wanted.)

Tex., Palo Pinto.—Palo Pinto County Commrs. invite bids until Feb. 8 to construct about 33 mi. of road radiating from Mineral Wells; \$100,000 bond issue available; J. C. Travilla, Engr., Fort Worth.

Tex., Paris.—Lamar county, Cooper Precinct, is reported to vote on \$100,000 bonds to construct roads in that precinct. Address County Commrs.

Tex., Paris.—City will pave streets with asphalt; concrete base; voted \$50,000 bonds; total expenditure about \$100,000; date of opening bids not decided; Engr., J. G. Tyler, Paris; Ed. H. McCulstion, Mayor. (Lately noted.)

Tex., San Antonio.—City let contract Roach-Manigan Paving Co. of Fort Worth, Tex., and Memphis, Tenn., to pave east side of Alamo Plaza between Blum and Houston Sts., and to Rushmore & Gowdy to pave W. Commerce between Santa Rosa Ave. and Camaron St., both streets to be paved with 3½-in. creosoted pine blocks.

Va., Alexandria.—U. S. Dept. of Agriculture, Washington, D. C., will build proposed experimental road on Mount Vernon Ave., Alexandria county, from Military Rd., near Arlington Cemetery, to city limits of Alexandria; about 4.5 mi.; plans, specifications, etc., at office of Public Roads, Dept. of Agriculture, P. St. J. Wilson, Asst. Director. (See Machinery Wanted.)

Va., Bristol.—Bristol Traction Co. will macadamize Euclid Ave. and Chester St. to Moore St., and Moore St. to Harneling St.

Va., Norfolk.—City contemplates completing extension of Olney Road to Granby St.; W. H. Taylor, Jr., Asst. City Engr., estimates cost at \$29,019.18, including \$13,529 to pave with granite blocks and curb along 1400 ft., \$3844.16 for storm sewers, \$4105 for house sewers, \$3000 for water mains, \$4300 for temporary bridge over Smith's Creek, etc.

W. Va., Charleston.—H. M. Brown, City Engr., prepared plans and estimates to pave 15 streets; about 4 mi.; estimated cost, \$135,270.

SEWER CONSTRUCTION

Ark., Gurdon.—City has preliminary plans, estimates and reports on proposed sewer system, water-works and electric-light plant; estimated cost, \$102,000; Engr., Albert C. Moore, Bartlett Bldg., Joplin, Mo.; R. S. Stevens, Mayor.

Fla., Clearwater.—City will probably open bids about Feb. 15 to construct sewers; 10, 12 and 15-in. cast-iron and tile pipe; build disposal plant to cost about \$4000; voted \$18,000 bonds; also voted \$5000 bonds to construct storm sewers; J. N. Drew, City Engr., in charge; R. T. Daniel, City Clerk. (Noted in October.)

Fla., Eustis.—City votes Feb. 2 on \$15,000 bonds to construct sanitary sewer and \$35,000 bonds to construct storm sewers and paving; I. N. Kennedy, Mayor.

Fla., Titusville.—City let contract Benj. Akerman, Titusville, at \$690 for 385 ft. terra-cotta storm sewer. (See Road and Street Work.)

Ga., Hartwell.—City will let contract to construct sewer system and water-works; \$46,000 bonds available; McAlpin Thornton, Mayor; noted in September. (See Machinery Wanted.)

Ga., Macon.—City votes Mch. 9 on \$30,000 bonds to construct sewers; J. J. Gaillard, City Engr. (Lately noted.)

Md., Baltimore.—City let Sanitary Sewer Contract No. 143 to Smith & Ruggles, 3350 York Rd., Baltimore, at \$29,754. (Lately noted call for bids.)

Mo., Caruthersville.—City votes Jan. 26 on \$32,000 bonds to extend sewer system. Address The Mayor.

Okla., Afton.—City votes Jan. 21 on \$37,000 bonds to construct sanitary and storm sewer system; Const. Engr., Benham Engineering Co., 435 American National Bank Bldg., Oklahoma City.

Okla., Tulsa.—City will extend sanitary sewer system at cost of \$12,000 and storm sewers at cost of \$80,000. T. C. Hughes, City Engr.

S. C., Columbia.—City Commrs. invite bids until Jan. 29 to extend sewer system and water-works; 10 mi. sewer mains from 8 to 15-in.; F. C. Wyse, Engr.-Supt.; additional sewers under second contract to follow within few months. (See Water-works and Machinery Wanted.)

Tex., Houston.—City will construct 36-in. storm sewer, 350 ft. long, on Golf Link Place Private Lane, from San Felipe St. north to gulch; bids at office City Secy. until Jan. 18; Ben Campbell, Mayor. (See Machinery Wanted.)

Tex., San Antonio.—City, Fred Fries, Clerk, receives bids until Feb. 1 to complete sanitary sewers and storm-water sewers previously let to Wm. G. Schuwirth Co.; includes Cherry St. sanitary intercepting sewer, contract section No. 20; Grove Ave. storm sewer, section 112; Cherry St. storm sewer, section 113; Hans Helland, City Engr. (See Machinery Wanted.)

TELEPHONE SYSTEMS

Ky., Bowling Green.—Farmers' Line Bowling Green Road Telephone Co. Incptd. by L. E. Holman, J. M. Speck, J. P. Read and G. W. Dorsey.

Ky., Siler.—Poplar Creek Telephone Co. Incorporated by Lee Rose, Thos. Peace and B. A. Lee.

N. C., Gatesville.—Gattis Telephone Co., capital \$15,000, incptd. by Nathan Riddick, Jr., and others.

Tenn., Nashville.—Bedford Mutual Telephone Co., capital \$5000, incptd. by W. B. Pearson, D. D. Hix, Ben Porter and others.

W. Va., Ruth (not a P. O.).—Ruth Consolidated Telephone Co., capital stock \$10,000, incptd. by H. H. McCarren, H. A. Rabel, A. B. Turley and others, all of Spring Hill, W. Va.

TEXTILE MILLS

Ga., Columbus.—Cotton Cloth, etc.—Bibb Mfg. Co. is reported to install electrical equipment and make other improvements to cost \$75,000.

N. C., Kannapolis.—Combed Yarn.—Cabarrus Cotton Mills reported as to build addition during 1915; has additional space to double plant; operates 20,000 producing spindles on combed yarns.

N. C., Winston-Salem.—Cotton Cloth.—Inverness Mills will add 24 broad looms; has let contract.

Okla., Muskogee.—Gloves.—American Glove & Knitting Co. Incptd. by W. L. Lindhard, T. J. Carey and R. S. Davis.

S. C., Charleston.—Asbestos Textiles.—General Asbestos & Rubber Co., C. B. Jenkins, Jr., sales manager, will build mill for manufacturing asbestos textiles; 2-story 300x100-ft. building of mill construction, costing \$50,000; install machinery costing \$75,000; building contract let Fiske-Carter Construction Co., Worcester, Mass., and Greenville, S. C.; Engrs.-Archts., Lockwood, Greene & Co., Boston, Mass., and Atlanta, Ga.; this plant to replace company's present textile factory, from which all machinery will be removed to new building; also will purchase additional machinery; company also has factory for high-grade packings, asbestos and rubber specialties, etc.

Tenn., Shelbyville.—Sheetings, etc.—Sylvan Cotton Mills Co. increased capital stock from \$72,000 to \$90,000 and will enlarge plant; purchased about 10 carloads of new machinery; future capacity to be 5000 bales annually. (Noted in Oct. to add 2600 spindles.)

W. Va., Philippi.—Woolen Blankets.—W. L. Fordyce and associates plan organization \$25,000 company to establish woolen mill; install 16-loom blanket equipment; has not purchased machinery; lately noted. (See Machinery Wanted.)

WATER-WORKS

Ark., Harrison.—City Council is reported to have engaged Albert C. Moore, Joplin, Mo., as engineer for water-works; city votes Feb. 22 on bond issue. Geo. C. Frew, Mayor. (Lately noted.)

Ark., Murfreesboro.—Williams & Freeman Water & Light Co., capital \$10,000, incptd.; J. E. Williams, Presnt.

Ark., Rison.—City will construct water-works. Address The Mayor.

Ark., Gurdon.—City has preliminary plans, estimates and reports on proposed water-works, electric-light plant and sewer system; estimated cost, \$102,000; Engr., Albert C. Moore, Bartlett Bldg., Joplin, Mo.; R. S. Stevens, Mayor.

Ga., Hartwell.—City will let contract to construct water-works and sewer system; \$46,000 bonds available; McAlpin Thornton, Mayor; noted in September. (See Machinery Wanted.)

Ky., Covington.—City will construct 24-in. duplicate water main from reservoirs at Fort Thomas to city to insure adequate water supply; estimated cost \$200,000, covered by bond issue; work will probably begin in spring; J. Mason Howk, Commr. of Public Property. (Lately noted.)

Ky., Fulton.—R. M. Chowning, Mayor, states city (lately noted to improve water-works) has no extensive improvements to make; is removing boilers and building spur track for handling coal; will let contract for putting steel jackets around 2 large steam boilers.

Ky., Marion.—Marion Water & Ice Co. (R. L. Moore and others) will probably receive bids about Feb. 1 to construct water-works. (Lately noted as having applied for franchise.)

La., Plaquemine.—City let contract Bash & James, Kansas City, Mo., at \$35,790, for water-works construction; pipe laying and pump; \$42,000 bonds available; C. A. Hees, Engr., Shreveport, La. (Bids lately noted.)

Mo., Caruthersville.—City votes Jan. 26 on \$30,000 bonds to extend water-works, drill well, etc. Address The Mayor.

N. C., Asheville.—City, J. E. Rankin, Mayor, asks bids until Feb. 12 for furnishing and laying lately-noted pipe; also grates and hydrants; F. L. Conder, City Clerk. (See Machinery Wanted.)

N. C., Durham.—Gilbert C. White, Engr., submitted plans and estimates of cost for water-works on Flat River; estimated total cost \$450,000. (Previously noted.)

Okla., Dustin.—City will vote on \$6000 bonds to extend water-works. Address The Mayor.

Okla., Euclid.—City voted Jan. 14 on \$50,000 bonds to extend water-works. Address The Mayor.

Okla., Guthrie.—City votes Jan. 14 on \$50,000 bonds to extend water-works. Address Mayor Nissley.

Okla., Redrock.—City votes Jan. 23 on \$22,000 bonds to construct water-works; will not at present construct electric-light plant, as originally planned; Const. Engr., Benham Engineering Co., 435 American National Bank Bldg., Oklahoma City. (Lately noted.)

S. C., Eastover.—City will construct water-works; bids by Board Public Works until Jan. 18; includes 25,000-gal. tank, 80-ft. steel

tower, kerosene engine, pipe, hydrants, valves, etc.; E. N. Chisolm, Jr., Engr., Room 20 Clark Law Bldg., Columbia, S. C. (See Machinery Wanted.)

S. C., Columbia.—City Commrs. invite bids until Jan. 29 to extend water-works and sewer system; 10 mi. water mains ranging from 6 to 12 in. and 10 mi. sewer mains from 8 to 15 in.; F. C. Wyse, Engr.-Supt.; additional water mains, under contract, to follow within few months. (See Machinery Wanted.)

Tex., Big Spring.—City let contract E. L. Dalton of Dallas to lay about 25,000 ft. water mains.

Va., Harrisonburg.—City will build filtration plant to cost about \$40,000. Address The Mayor.

Va., Lynchburg.—City contemplates installing electric pump in old pump station for emergency purposes; H. L. Shaner, City Engr.

W. Va., Huntington.—Huntington Water Co. will lay 1900 ft. 6-in. water mains to Cedar Grove.

WOODWORKING PLANTS

Ala., Bay Minette.—Boxes, Hampers, etc.—Frank B. Nihart, Arcade Bldg., plans to establish factory for potato hampers, berry boxes, orange straps, etc.; has not purchased the machinery. (See Machinery Wanted.)

Ala., Mobile.—Boxes and Crates.—Ideal Box & Crate Co., capital stock \$2000, inceptd.; Griffin H. Deevies, Prest., Chicago, Ill.; H. J. Williams, V.-P., and W. B. Burton, Secy.-Treas., Mobile.

Ark., Harrisburg.—Barrels and Heading.—M. Catlett of Piggot, Ark., is reported as contemplating erection of slack barrel and heading plant and hickory mill; build 18 mi. standard-gauge tramroad.

Ark., Leslie.—Hubs and Staves.—Mays Mfg. Co. organized; paid-up capital stock \$48,000; consolidates Leslie Ice, Lighting & Power Co. and Lenker Hub & Mfg. Co.; manufacture hubs, staves, ice and electricity; J. R. Clay, Prest.; C. C. Hatchett, V.-P.; Ed. Mays, Secy.-Treas.

Ark., Marked Tree.—Handles.—Thos. J. Turner will rebuild handle factory; erect 96x32-ft. mill-construction building; machinery and building material supplied; manufacture brooms, brush and mop handles. (Lately noted.)

Ky., Barbourville.—Dowel Pins, etc.—T. W. Minton & Son contemplate adding machinery to manufacture dowel pins, insulation rods and other hickory products from mill waste. (See Machinery Wanted.)

Ky., Louisville.—Boxes and Baskets.—Falls City Box & Basket Co., capital stock \$50,000, organized with W. O. Anderson, Prest., and J. Oberdorfer, V.-P., both of Henderson, Ky.; has plans by Brinton B. Davis, Louisville, for 2-story frame factory building costing \$15,000.

Ky., Quicksand.—Chair Factory.—Kentucky River Hardwood Lumber Co. will operate chair factory in connection with lumber plant.

Miss., Jackson.—Veneer and Boxes.—Jackson Veneer & Box Co. (lately noted inceptd., capital \$10,000) continues operation of established plant; F. M. Roell, Prest. and Mgr.; C. W. Payne, V.-P.; J. A. Roell, Secy.; Jno. L. Moore, Treas.

N. C., King.—Buggies.—Scott & Troulove of Donzoha, N. C., are reported to establish buggy factory.

N. C., Walnut Cove.—Windows, Doors, etc.—Dan River Lumber Co., capital \$25,000, incorporated; D. L. Donnell, Prest., Oak Ridge, N. C.; W. A. Sullivan, V.-P., Pinnacle, N. C.; T. J. Covington, Secy., Treas. and Mgr., Walnut Cove; install 4-sided planer and window and door-frame machine (See Machinery Wanted)

S. C., Spartanburg.—Buggies and Wagons.—Spartan Buggy & Wagon Co., capital \$3000, inceptd.; O. L. Johnson, Prest.; B. T. Legg, Secy.-Treas.

FIRE DAMAGE

Ala., Birmingham.—Residence at Edgewood owned by Chas. F. Hogue & Hogue & Friedman; loss \$6000.

Ala., Ashland.—S. D. Treadwell & Sons' 3 stores, loss \$25,000; Robert Schuessler estate's building, loss \$4000.

Ala., Dallas Mills, P. O. at Huntsville.—Four houses, owned by Dallas Mfg. Co.; loss \$3000 to \$4000.

Ala., Decatur.—Decatur Brick & Tile Co.'s plant partially destroyed; estimated loss, \$7000.

Ala., Montgomery.—S. L. Smith's residence at 116 High St.; loss \$7000 to \$8000.

Ala., Opp.—Buildings owned by W. S. Spurlin and occupied by J. S. Stanley, T. J. Tew, H. J. Burgess and J. G. Roberts.

Ark., Arkadelphia.—Building owned by Dr. J. H. Bell, occupied by Arcade Theater and Hodgins & Davidson's store; loss \$3000.

Ark., Argenta.—John B. Ray's store at 22d and Railroad Sts.

Ark., Booneville.—W. F. Valentine's gin; loss \$4000.

Ark., Gum Springs.—Public school. Address School Trustees.

Ark., Hampton.—Postoffice; Hampton Drug Co.'s store; W. C. Dunn's store; J. L. Harris' store; Campbell & Co.'s building; H. B. Dunn's building; total loss \$60,000.

Ark., Marmaduke.—Bank of Marmaduke; Levi Roberts' store; postoffice; loss \$15,000 to \$20,000.

Ark., Pine Bluff.—G. E. Lytle's residence; loss \$3000.

D. C., Washington.—Byron S. Adams' printing plant at 512 11th St. N. W.; loss \$10,000.

Fla., St. Petersburg.—Old Homestead Inn at Crystal Beach, owned by Crystal Beach Co. (A. P. Avery and others).

Ga., Adel.—Mrs. J. H. Hay's residence, occupied by O. S. Bryan.

Ga., Ashburn.—W. A. Murray's store, loss on building \$20,000; Betts-Evans Trading Co.'s store, loss \$10,000.

Ga., Birmingham.—Huffstutler Transfer Co.'s warehouse at 1000 N. 24th St.; loss \$5000.

Ga., Brookfield.—A. B. McMillan's residence; loss \$3000.

Ga., Chauncey.—Parkerson Drug Co.'s store; Peacock Furniture Co.'s store.

Ga., Dexter.—Buildings occupied by Shepard & Mullis, H. F. Chadwick, Jerome Kennedy, T. J. Hunkcutt and T. W. Tutt; loss \$8000.

Ga., Fort Valley.—Residence at Persons and Knoxville Sts. owned by R. E. Brown.

Ga., Gray.—Methodist Church; loss \$4000. Address The Pastor.

Ga., Leslie.—Lucius Harvey's residence, occupied by J. I. Jay; loss \$3000.

Ky., Bowling Green.—Robt. Crump's flour mill; loss \$8000 to \$10,000.

Ky., Louisville.—Sam Cooper's store at 410 E. Jefferson St.

Ky., Louisville.—Fred Tross' carriage and automobile paint shop at 1512 Main St.; estimated loss \$12,000.

La., DeRidder.—Commercial Hotel, building owned by H. H. Fuseller; loss \$3000.

La., New Orleans.—John M. Parker's residence at 2530 Prytanla St.; loss \$3000.

La., New Orleans.—Gustave A. Betz's store and residence at 1302-1304 Magazine St.; loss \$3000.

La., Raceland.—C. E. Knobloch & Co.'s store; loss \$5000.

La., Stevendale.—W. H. Stevens' residence; loss \$3000.

Md., Baltimore.—Warehouse of Howard Cohen, 1828 Pennsylvania Ave., burned at reported loss of \$3000.

Md., Frostburg.—E. A. Gross' business block, occupied by Shearer Bros.

Md., Worton.—Mrs. L. S. Costello's residence on Worton Manor Beach Farm; loss about \$6000.

Miss., Handsboro.—School building. Address School Trustees.

Miss., Holly Bluff.—W. H. Downer's barn and store building, loss on former \$4000; A. T. Ferth's store, loss \$10,000; Cowan & Cowan's store, loss \$3500.

Mo., Carrollton.—Scott Livery Barn; Everett's Cafe; Jarboe Flour Mill; loss \$10,000.

Mo., Knobview.—Postoffice; R. M. Cardetti's store; estimated loss, \$6000.

Mo., Valley Park.—Assembly building of Employees' Outing Club of Stix-Baer-Fuller Dry Goods Co., St. Louis, Mo.; loss \$15,000.

N. C., Charlotte.—Structure at 18 W. 5th St., occupied by Ben Vonde Co.'s cleaning and dyeing establishment and others, and owned by Dr. E. Reid Russell, Asheville, N. C.; loss \$75,000.

N. C., Conover.—Dr. Moser's residence.

N. C., Goldsboro.—Goldsboro Oil Mill's office.

N. C., Gregory.—Postoffice.

N. C., Oxford.—Building occupied by Brame & Bluzek and owned by Gilmer Bros. of Winston-Salem, N. C.; Hall estate's two buildings, occupied by Pressing Club and R. W. Brown & Co.

N. C., Stanley.—B. F. Carpenter Sons So.'s 2 stores.

Okla., Crescent.—Houghton & Douglass' gin; loss \$6000.

Okla., Owasso.—John Ingram's residence; loss \$5000.

S. C., Lowryville.—Carolina & Northwest Ry.'s passenger and freight depot; estimated loss \$2500; L. T. Nichols, Gen. Mgr., Chester, S. C.

S. C., Greenville.—Markley Bldg., on Main St.; owned by D. F. Jack, C. E. Whitney, Martin & Garrett and Maxwell Bros., all of Augusta, Ga.; loss \$20,000.

S. C., Simpsonville.—Simpsonville Oil Mill's plant and warehouse; estimated loss \$25,000.

S. C., Whitmire.—Z. H. Suber's store; McCullough & Baker's store.

S. C., Dillon.—Methodist church; loss about \$40,000. Address The Pastor.

Tenn., Dresden.—Claud Lett's store at Lynn Point.

Tenn., Finlay.—Edwards Bros. & Huey's store; loss \$4,000.

Tenn., Talbott.—T. C. Burnett's warehouse.

Tex., Dallas.—G. Steinlein's residence at 4612 Harry St.; loss \$3000.

Tex., Dallas.—Four dwellings, owned by J. and L. Danna at 1600-06 Lawrence St.; loss \$4000.

Tex., Longview.—Opera-house; Masonic Temple; loss \$50,000.

Tenn., Memphis.—J. J. Martin's residence at 1179 Fountain Court; loss \$5000.

Tex., Bryan.—J. M. Royder & Bro's store at Koppe Bridge, on Brazos river; loss \$10,000.

Tex., Round Rock.—Building owned by Terry, Barbee & Goforth, San Marcos, Tex., and occupied by Morris Meyer & Co.'s store.

Tex., Fredericksburg.—F. J. Maler's dwelling; loss \$5000.

Tex., Galveston.—A. Darras' residence at 2102 31st St.; loss about \$7000.

Tex., Houston.—J. E. Goree's residence in Park Pl.; loss \$5000.

Tex., Jefferson.—Public school building; loss \$15,000. Address School Trustees.

Tex., Palestine.—Palestine Creamery Co.'s plant; loss \$6000 to \$8000.

Tex., Port Lavaca.—Willett Wilson's store building; loss \$44,000.

Tex., Temple.—Temple Planing Mill, owned by J. B. Conlisk; loss \$10,000.

Tex., Terrell.—Building owned by Dr. T. P. Davis, Mrs. F. H. Martin and Miss Kate Grinnan; loss \$20,000.

Tex., Venus.—J. D. Kugle's residence; loss \$6000.

Tex., Weldon.—Tullis Gin Co.'s plant; loss about \$7000.

Va., Charlottesville.—Jefferson Theater, owned by stock company of which Geo. E. Walker is Pres.; loss about \$40,000.

Va., Bassett.—Bank of Bassett; S. H. Hooker's store; Bassett Furniture Co.'s store; postoffice, building owned by C. C. Bassett.

Va., Lexington.—A. L. Koons' building, occupied by Harrison & Hutton, and Farmers' Deposit & Savings Bank; Franklin Hall; R. S. Anderson's store; total loss \$50,000.

Va., Petersburg.—A. B. Cook's rock crusher and sawmill in Chesterfield county, near Petersburg.

Va., Richmond.—Albion Theater, lately noted damaged by fire, was not owned by C. H. Hagan as reported.

Va., Stuart.—Mothers' Home; loss about \$15,000; Moir S. Martin and R. S. Martin are interested.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ala., Montgomery.—Meyer Loeb, Court Sq., is reported to erect apartment-house.

Fla., Clearwater.—W. F. Spurlin will erect store and apartment building. (See Stores.)

Ky., Louisville.—L. Keller & Son will erect brick apartment-house at 1909 S. 3d St.; cost \$50,000.

Md., Baltimore.—Co-operative Store Co. of Baltimore will remodel dwellings at 4-8 W. 24th St. for apartment and stores; 42x90 ft.; 3 stories; brick; slag roof; steam heat; gas and electric lights; cost about \$6000; Wm. O. Sparklin, Archt., 562-6 Law Bldg., Baltimore; plans ready Jan. 18; bids due Jan. 25.

Md., Hagerstown.—Potomac Real Estate Co. will erect 5-story brick and marble apartment-house.

Mo., St. Louis.—Harry Horwitz will expend \$6800 for addition to tenement-house at 1401-19 Cass St., and \$1200 to repair tenement-house at 1507-17 N. 14th St.; construction by owner.

Mo., St. Louis.—Albert Koberman will erect 3 and 4-room flats on Bamberger Ave.

Mo., St. Louis.—F. J. Fendler will erect three 2-story tenements at 3111-15-17 Chipewa St.; cost \$10,500; construction by owner.

Mo., St. Louis.—Frank L. Dittmeier Real Estate Co. will erect 2-story brick building; contain 5 and 6-room apartments.

Mo., St. Louis.—Theodore Degenhardt Building & Construction Co. will erect 4 single flats on Utah St.

Tex., Dallas.—W. W. Graham will erect apartment-house at 2905-07 Forest Ave.; cost \$12,000.

Tex., Houston.—J. Mendlowitz, Seguin, Tex., has plans by Finger & Bailey, Houston, for apartment-house at Peace and Jackson Sts.; brick and concrete; 8 three and four-room suites; sleeping porches; 59x100 ft.; pressed-brick front.

Tex., Houston.—J. L. Mitchell will remodel building for stores and apartments.

Tex., San Antonio.—W. Jaffe is having plans prepared for apartment at 411 Oakland St.; 2 stories.

ASSOCIATION AND FRATERNAL

Ga., Augusta.—Junior Order of American Workmen will erect building at Young St. and Wallin Way; lower floor for stores; upper floor for lodge hall; cost \$6500.

Ga., Howard.—Woodmen of the World will erect building; 30x40 ft.; Lewis B. Bown is interested.

La., Oakdale.—Oakdale Lodge No. 97, I. O. O. F., will erect lodge building to replace structure lately noted burned; 30x56 ft.; brick; electric lights; concrete sidewalks; cost \$4000; bids opened about Mch. 1; construction to begin Apr. 1. T. J. DeHaven is interested.

Md., Cumberland.—Y. M. C. A. is reported to erect building.

Tenn., Union City.—B. P. O. E. will erect lodge building on Washington Ave.; 100x25 ft.; ordinary construction; cost \$7000; other details not determined; begin construction in spring; W. A. Flowers, Secy. (Lately noted.)

Tex., Houston.—Poplar Camp, Woodmen of the World, will erect store and lodge building at Main and Paschal Sts.; cost \$4650.

W. Va., Charleston.—Packard & Sansbury, Columbus, O., are not architects for Masonic Temple at Charleston as previously reported.

W. Va., Parkersburg.—O'Connell Division No. 1 and Ladies' Auxiliary, A. O. H., plan to erect lodge building; James Mathison, M. J. Hughes, Andrew Whitstead and others, committee.

BANK AND OFFICE

Ala., Mobile.—Munson Steamship Co. will erect brick office building on Commerce St.; cost \$2300.

Ky., Frankfort.—State National Bank has plans by Weber, Werner & Adkins, Cincinnati, O., for bank building; 1 story; fireproof; white terra-cotta construction; plans ready in about 1 week; cost \$30,000.

Mo., Jefferson City.—Jefferson Investment Co. will let contract about Jan. 30 for office building at High and Madison Sts.; 66x32 ft.; 7 stories; fireproof; asbestos roofing; combination heating plant; electric lights; cost about \$115,000; Miller & Miller, Archts., Jefferson City, may be addressed. (Lately noted.)

Tenn., Maryville.—Bank of Blount County is reported to erect bank building.

Tex., Dallas.—J. W. Crotty and others are having plans prepared for business and office building. (See Stores.)

Tex., Freeport.—Freeport National Bank, it is reported, will soon let contract to erect additional story to building to be occupied by Freeport Texas Co. and Houston & Brazos Valley Ry.

Tex., Moody.—First National Bank will erect bank and store building to replace structure lately noted burned; 24x130 ft.; ordinary construction; tin roof; stoves; electric lights; concrete sidewalks; construction to begin about March 1; cost \$6000.

Tex., Trinity.—W. T. Carter & Bros., Camden, Tex., let contract about Feb. 1 to erect store and office building. (See Stores.)

Va., Lynchburg.—Lynchburg National Bank has plans by Alfred C. Bossom, 366 5th Ave., New York, for bank building at 9th and Main Sts.; 1 story; 42x132 ft.; fireproof construction; cost \$115,000. Address architect. (Previously noted.)

W. Va., Shinnston.—People's Bank of Shinnston, W. Va., Incptd. with Geo. A. Ferguson, Prest.; will erect bank building.

CHURCHES

Ala., Bessemer.—Brighton Methodist Church will remodel building, providing 4 additional Sunday-school rooms, etc. Address The Pastor.

Ark., Little Rock.—Christian Church will erect building. Address The Pastor.

Ark., Newell.—First Baptist Church, Rev. A. H. Smith, pastor, will erect building; 40x60 ft.; mill construction; A. H. Roofing "Shelcote"; furnace heat; electric lights; cost \$8000; bids opened in March; W. A. Rayfield & Co., Archts., P. O. Box 649, Birmingham, Ala., may be addressed. (See Machinery Wanted.)

Fla., St. Petersburg.—Christian Science church will erect building at 4th Ave. and 5th St. Address The Reader.

Fla., Plant City.—Catholic Church is being organized and will erect building; Rev. J. J. Wallace is interested.

Ky., Louisville.—A. M. E. Zion Church will erect building at 13th St. and Broadway; brick; cost \$30,000. Address The Pastor.

Md., Baltimore.—Union Square M. E. Church, Rev. J. F. Heise, pastor, 1409 W. Lombard St., will enlarge Sunday-school building.

Tex., Houston.—Congregation Beth Shalom has plans by Finger & Bailey, Houston, for synagogue at La Branch and Walker Sts.; buff brick; white stone trimmings; Sunday-school rooms in basement equipped with sliding doors; dome ceiling of stained glass; cost \$25,000; S. J. Westheimer, Chm. Bldg. Com. \$25,000; S. J. Westheimer, Chm. Bldg. Com.

W. Va., Huntington.—West Huntington M. E. Church is reported to erect building; Rev. O. U. Marple, pastor.

CITY AND COUNTY

Ga., Atlanta.—Library.—City plans to erect branch Carnegie Library; cost \$15,000; Mrs. Percival Sneed, Librarian.

Ga., Rome.—City Hall and Hospital.—City is having plans prepared by A. Ten Eyck Brown, 607-10 Realty Trust Bldg., Atlanta, for city hall and hospital, for which bonds are to be voted on Feb. 11; issue to include \$75,000 for municipal building, this amount probably to be supplemented by sale of present city hall and No. 1 Fire Station, and \$25,000 for hospital, county probably to vote on similar amount for same purpose. (Lately noted.)

Ky., Paducah.—City Hall and Market.—City accepted plans of D. Harry Jamieson, architect for Sherrill-Russell Lumber Co., Paducah, and will soon let contract for improvements to second and third floors of city hall; city also will improve market. Address The Mayor.

Miss., Vicksburg.—Fire Station.—City will erect central fire station on S. Washington St. Address The Mayor.

Mo., St. Louis.—House of Detention.—City will erect juvenile court and house of detention at 14th St. and Clark Ave.; 50x108 ft.; 4 stories and roof playground; promenade tile roofing; elevators to cost \$3000; cost \$100,000 complete; plans by Prest. Board of Public Service, 301 City Hall, St. Louis. (Lately noted.)

N. C., Winston-Salem.—Stable.—Sanitary Com. of Board of Aldermen is having plans prepared for municipal stable on N. Trade St.; brick; fireproof; 2 stories; 62x110 ft.; ornamental front; gravel roof; air and light shaft in center of roof through second story to stable and storage departments on first floor.

Va., Richmond.—Police Station.—City opened bids to erect Second Police Station at Smith and Marshall Sts.; 60x140 ft.; fireproof; 2 stories; brick and stone; tile or slate roof; hot-water heat; Carneal & Johnston, Archts., Chamber of Commerce Bldg., Richmond; J. T. Nuckols, Richmond, is lowest bidder for construction at \$52,200; John-

son-Longworth Co. is lowest bidder for heating at \$2990. (Lately noted.)

W. Va., Huntington.—Market.—City plans to erect market-house at cost of \$10,000; 1 story at present; probably erect additional story later; considering steel structure; fireproof; size not determined; L. A. Pollock, Commissioner of Public Buildings. (Previously noted.)

COURTHOUSES

Ky., Lancaster.—Garrard county voted \$15,000 bonds to erect courthouse. Address County Commrs. (Lately noted.)

Tenn., Camden.—Benton County Commrs. will erect \$40,000 courthouse.

Tenn., Camden.—Benton County Commrs. are reported to expend \$40,000 to erect courthouse.

DWELLINGS

Ala., Phenix City.—R. K. Allen will erect \$4000 bungalow on Summerlille Heights; 2 stories and basement.

D. C., Washington.—J. R. Halslip, 2120 1st St., has plans by Echo O. Volanet for 2 dwellings at 2821-3 S. Dakota Ave. N. E.; 2 stories; frame; slate roof; cost \$5000; construction by owner.

D. C., Washington.—S. Shapiro, 537 Irving St. N. W., has plans by Hunter & Bell, Southern Bldg., Washington, for 3 dwellings at 240-4 16th St. S. E.; 13x26.6 ft.; 2 stories; brick; tin roof; cost \$4200; construction by owner.

D. C., Washington.—Charles Walker, Corcoran Bldg., has plans by A. E. Landvoigt, 713 14th St. N. W., Washington, for 6 dwellings at 15th and Buchanan Sts.; 25x40 ft.; ordinary construction; slate roof; hot-water heat; electric lights; cement sidewalks; cost \$25,000. (Lately noted.)

D. C., Washington.—Harry A. Kite, 1338 G St. N. W., has plans by A. E. Landvoigt, 713 14th St. N. W., for 5 dwellings at 1306-14 Corbin St. N. E.; 17x30 ft.; 2 stories; brick; slag roof; cost \$12,500; also for dwelling at Macomb St. and Ross Pl.; 30x38 ft.; mill construction; slate roof; hot-water heating plant to cost \$500; electric lights, \$150; cement sidewalks; cost \$7500 without mechanical equipment; construction by owner.

Fla., Indian Rocks (not a P. O.).—Kenneth M. Ransom, Tampa, Fla., will erect brick and wood bungalow; construction by owner.

Fla., Jacksonville.—W. V. Henry will erect 6 one-story frame dwellings on Rushing St.; cost \$3600.

Fla., St. Augustine.—Lewis Leonard plans to erect residence; 2 stories; 8 rooms.

Fla., St. Petersburg.—H. H. Barr, Reading, Pa., will erect residence in Springhill.

Fla., Tampa.—C. E. Webb will erect \$3500 residence.

Fla., Tampa.—Mrs. Gustav Wles will erect 1-story residence; cost \$2950.

Fla., Tampa.—Mrs. Marie E. Winn will erect \$2800 residence.

Fla., Tampa.—W. J. Bennett will erect \$2500 residence.

Ky., Louisville.—S. L. Dorsey will erect frame dwelling at 3013 Virginia St.; cost \$2000.

Ky., Louisville.—C. C. Eblen will erect brick-veneer dwelling at 1957 Roanoke Ave.; cost \$3300.

Ky., Louisville.—John M. Davis, 304 Realty Bldg., will erect dwelling to replace structure lately noted burned at 4622 S. 3d St., Beechmont; about 20x65 ft.; ordinary construction; asbestos or metal roofing; hot-air heat; cost \$4000 without mechanical equipment.

Ky., Louisville.—Ollie J. Schoo will erect brick veneer dwelling at 2048 Eastern Parkway; cost \$3000.

Ky., Mayesville.—Stanley F. Reed and N. S. Calhoun purchased Newdigate Farm on Lexington Pike; will subdivide, install gas and electricity, erect about 25 dwellings, etc.

Md., Baltimore.—Casper G. Meisel, 714 Gorsuch Ave., is having plans prepared by O. Schratke, Raspeburg, Md., for dwelling at Belmar and Mannington Aves., Belmar; 32x38 ft.; frame; slate or asbestos roof; hot-water or vapor heat; gas and electric light; cost about \$3000; construction by architect.

Md., Baltimore.—Overlea Realty Co., Hy. Kolb, Prest., Belmar, will erect 5 dwellings; plans by owner for 3 at Forest View and Rose Aves.; 26x32 ft.; 2 stories; 1 slate, 2 shingle roofs; plans by Philip Malkus for one on Belmar Ave. near Belair Rd.; plans for one by Joe Chetalet on Cherry Ave. near Dietz Ave.; both 36x48 ft.; 2 stories; slate roof; all frame; steam heat; gas and electric light; cost about \$13,500.

Md., Baltimore.—A. S. Anderson has plans by J. E. Laferty, 11 E. Pleasant St., Baltimore, to remodel dwelling at Melrose and Bellona Aves.

Md., Baltimore.—E. J. Gallagher Realty Co., 320 Munsey Bldg., will erect 44 dwellings on 27th St., between Oak and Huntingdon Aves.; 20 on McElderry St., between Decker Ave. and Potomac St.; 14x44 ft.; cost about \$1500 each; 20 on Potomac St., between McElderry and Jefferson Sts.; 20 on Decker Ave., between McElderry and Jefferson Sts.; 12.6x40 ft.; cost about \$1200 each; probably 74 on Homestead St., between Polk St. and Harford Ave.; 14x44 ft.; cost about \$1450 each; all 2 stories; brick; composition roof; hot-air heat; gas and electric light.

Md., Baltimore.—Globe Realty Co., L. B. Purnell, Prest., 32 South St., will improve tract at Poplar Grove St. between Riggs Ave. and Peterson Ave. with 165 dwellings to cost about \$3500 each; will erect immediately 11 dwellings on Poplar Grove St.; 2 stories; brick; stone foundations; cost \$38,500.

Md., Baltimore.—Randolph Forrester, 2019 W. North Ave., has plans by Jacob F. Gerwig, 600 Equitable Bldg., Baltimore, for 11 dwellings on Westwood Ave. near Payson St.; brick; slag roof; hot-air heat; cost about \$23,000; construction by owner.

Md., Glyndon.—C. H. Porter has plans by Wm. F. Stone, 55 Knickerbocker Bldg., Baltimore, for dwelling; 28x31 ft.; frame; slate roof; hot-water heat; electric light; cost about \$4000.

Md., Govans.—Thos. Mullan, 4001 Greenmount Ave., Baltimore, has plans by A. L. Blatchley, Baltimore, for 13 dwellings on Belgian Ave. between Wilson St. and Ellerslie Ave.; 14x48 ft. each; ordinary construction; Carey roofing; hot-air heating plants to cost \$100 each; electric and gas lights; cost \$18,200; construction by owner.

Md., Wardour Station (not a P. O.).—W. B. Norris has plans by Bayard Turnbull, 323 Charles St., Baltimore, for dwelling; 38x28 ft.; frame; shingle roof; hot-air or hot-water heat; electric light; bidders are Philip Hervieux, Jas. J. Stehle, Elmer E. Parkinson, Ben Bros., all of Annapolis, Md.; bids due Jan. 19. (Lately noted.)

Miss., Jonestown.—G. W. Butler is erecting residence; cost \$10,000.

Mo., Kansas City.—Carl F. Gustafson, 4417 Scarritt Ave., will erect residence at 109 W. 61st St.; 32x38 ft.; 1½ stories; fireproof; hollow tile; fireproof roofing; cost \$4500; hot-water heating plant, \$400; electric lights, \$150; construction to begin June 1. (Lately noted.)

Mo., St. Louis.—James Winings is reported to erect residence on Jennings Ave.

N. C., Raeford.—E. L. Ashley, Glens Falls, N. Y., and A. G. Johnson will erect number of 5 to 8-room 1 and 2-story farm dwellings equipped with water, electric light, sewer system, etc., in connection with development of tobacco farms at Ashley Heights; station will also be erected. (See Land Development.)

Okla., Tulsa.—Kate C. Fulgham will erect 2-story frame residence on N. Denver St.; cost \$4000.

Okla., Tulsa.—M. H. English will erect 2-story frame residence on S. Denver St.; cost \$5500.

Okla., Tulsa.—J. S. Cosden has plans by Henry F. Holt, 315 E. 10th St., Kansas City, Mo., for residence; 86x46 ft.; 2 stories, with finished basement and attic; ordinary construction; slate roof; vacuum steam heat; electric lights (conduit job); bids opened Jan. 8; reported cost \$35,000. (Lately noted.)

Tex., Houston.—Dr. N. N. Allen has plans by Finger & Bailey, Houston, for residence; brick and hollow tile; tile roof; 2 stories and basement; 9 rooms; sleeping porches; cost \$10,000.

Tex., Houston.—Ward Watkins is erecting \$5000 residence.

Tex., Houston.—J. F. Cotter is having plans prepared by Alfred C. Finn, Houston, for residence; frame stucco; red tile roof; cost \$15,000; bids opened Jan. 16; sleeping porches.

Tenn., Knoxville.—J. H. Rose will erect frame dwelling on Highland Ave.; cost \$3500.

Tex., San Antonio.—E. A. Fox has plans by Beverly W. Spillman, San Antonio, for residence; stone; glazed tile roof; electric lights; heating and water plants.

Tex., Beaumont.—Hubert B. Oxford will rebuild residence lately noted damaged by fire; cost \$3000.

Tex., El Paso.—Mayfield Building & Improvement Co. will erect bungalow; brick; cost \$4000.

Tex., Fort Worth.—Tom B. James will erect brick residence on College Ave.; cost \$20,000.

Tex., San Antonio.—C. V. Lancaster will erect 6-room dwelling on Myrtle St.; cost \$2800.

Va., Alexandria.—Harry B. Caton is having plans prepared by Frank Upton, 1003-06 Woodward Bldg., Washington, D. C., for dwelling; 32x56 ft.; frame; brick veneer; probably vulcanite roofing; hot-water heat; electric lights; cost about \$5000.

Va., Harrisonburg.—Charles F. Coffman is having plans prepared by Frank Upton, 1003-06 Woodward Bldg., Washington, D. C., for dwelling; 8 rooms; brick; hot-water heat; electric lights; cost about \$3000.

Va., Norfolk.—C. C. Fitch will erect 2-story frame residence on Redgate Ave.; cost \$2800.

Va., Norfolk.—Johns Bros., Inc., will erect 2 double brick 2-story residences on Southampton Ave.; cost \$3500.

Va., Richmond.—Herbert C. Friend will erect 2-story frame dwelling on Virginia Ave.; cost \$3500.

Va., Richmond.—N. E. Ancarrow plans to erect 3-story brick residence at 2003 W. Grace St.; cost \$10,000.

Va., Richmond.—W. A. Graffam will erect 2-story brick dwelling on Floyd Ave. between Sycamore and Addison sts.; cost \$5000.

Va., Suffolk.—M. T. Elliott has plans by Benton & Moore, Wilson, N. C., for residence; 60x75 ft.; ordinary construction; slate roof; hot-water heat; cost \$15,000.

W. Va., Huntington.—D. L. Barlow will erect 8-room brick residence on 13th Ave. near 9th St.; cost \$3000.

GOVERNMENT AND STATE

D. C., Washington.—State, War and Navy Building.—Plans are being prepared to remodel plumbing of State, War and Navy Bldg.; about 500 fixtures; marble floor and side slabs; metal laths; cost about \$80,000; plans ready Jan. 11 at office of Supt. State, War and Navy Bldg.; bids due Feb. 10; Frank Upton, Archt., Woodward Bldg., Washington, D. C.

Fla., Jacksonville.—Postoffice.—Atlantic National Bank, Thos. P. Denham, V-P., will erect building to be occupied by Government as branch postoffice; 40x130 ft.; cost about \$30,000.

Fla., Tampa.—Postoffice.—James McKay opened bids for alterations in postoffice and installing additional lock boxes; Grohne Construction Co., Joliet, Ill., is lowest bidder at \$2800.

Tenn., Covington.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., opens bids Feb. 29 for construction complete, including mechanical equipment, interior lighting fixtures and approaches of postoffice; plans and specifications from Custodian of site at Covington, and Mr. Wenderoth as above.

Tex., Fort Sam Houston.—Barrack, etc.—Constructing Quartermaster, Fort Sam Houston, receives bids in triplicate until Feb. 4 to construct barrack, lavatory and stable, including plumbing, for pack train, at old target range about 4 miles northeast of San Antonio, Tex.; information on application.

HOSPITALS, SANITARIUMS, ETC.

Ga., Macon.—City votes March 9 on \$150,000 bonds to erect and maintain city hospital; J. J. Gallford, City Engr. (Lately noted.)

Md., Baltimore.—Burmott Hospital for Crippled Children Incptd. by directors as follows: Matthew S. Brennan, 208 N. Calvert St.; Harry C. Jones, 507-9 Chamber of Commerce Bldg.; Armistead M. Webb, 260 St. Paul St.; Yates Penniman, National Marine Bank; Paul M. Burnett, 216 St. Paul St.; J. Barry Mahool, 121 S. Calvert St.; Howard M. Emmons, 943-53 Calvert Bldg., all of Baltimore.

N. C., Burlington.—Benton & Moore, Wilson, N. C., are architects for hospital to be erected; 75x90 ft.; ordinary construction; tile roof; electric elevator; cost \$20,000.

Okla., Cushing.—General Hospital, Box 333, Cushing, receives bids until Jan. 14 to erect 2-story-and-basement 25-room brick hospital; plans and specifications on application.

S. C., Georgetown.—Dr. M. P. Moorer will erect building for residence and infirmary; 20 rooms; hot-water heat; electric lights; plans not prepared; cost \$15,000, exclusive of equipment.

Tenn., Chattanooga.—City and county health officials appointed following committee to accept plans and supervise construction of hospital for contagious diseases:

Judge Will Cummings, Mayor Thompson, Drs. P. D. Sims and McManus, H. Clay Evans and Dr. John B. Steele; will ask plans for brick structure to cost \$10,000, exclusive of plumbing.

Tex., Galveston.—Dr. James D. Ward, 312 Sweringen & McGraw Bldg., San Antonio, will erect sanitarium at Nottingham, near Galveston; 3 stories; 60x66 ft.; mill and concrete construction; cypress shingle roof; acetylene-light plant; construction to begin in fall; cost \$5000.

Va., Marion.—Southwestern State Hospital for the Insane has plans by Clarence B. Kearfott, Bristol, Tenn., for infirmary; 166x106 ft.; 2 stories and basement; ordinary construction, with fireproof stairs, brick walls and concrete foundation; slate roof; steam heat and electric lights from present central plants; construction by day labor; Dr. J. C. King, Supt.

HOTELS

Fla., St. Petersburg.—Crystal Beach Co. (A. P. Avery and others) will rebuild Old Homestead Inn, noted burned; erect temporary dining-room and kitchen for use pending erection of permanent structure.

Fla., St. Petersburg.—Fivay Improvement Co. (W. L. Sonntag of St. Paul, Minn., and others) are reported contemplating development of Fivay, including erection of 100-room hotel, with clubhouse. (See Land Development.)

Ga., Atlanta.—Hugh Richardson is having plans prepared by A. Ten Eyck Brown, Atlanta, to remodel building at 166-168 Peachtree St. for hotel; will move structure back, erect addition in rear; 3 stories; install heating plant and plumbing; composition roof; cost \$6000 to \$7000; bids opened about Jan. 15.

Tenn., Nonconah, P. O. at Memphis.—S. Gelsamer & Son, 231 McLemore Ave., Memphis, are reported to erect hotel for Illinois Central R. R. shophouse; brick; 100x150 ft.; steam heat; 4 baths, with tubs and showers; cost \$50,000; will erect temporary structure, 50x100 ft., pending erection of permanent building.

Tenn., Tiptonville.—A. E. Markham is reported to erect 16-room hotel.

MISCELLANEOUS

Fla., Tampa.—Bowling Alley, etc.—R. Muggs will remodel building on Lower Franklin St. for bowling alleys, poolroom, etc.

La., New Orleans.—Grandstand, etc.—New Orleans Baseball Club, A. J. Heinemann, Pres., is reported to erect steel grandstand and bleachers in White City Grounds, Carrollton and Tulane Aves.

Md., Salisbury.—Stable.—L. W. Wimbrow has plans for stable and garage; 3 stories; 60x113 ft.

Miss., Jackson.—Home.—Old Men's Home Incptd. by Rev. W. G. Francis, O. J. Waite, Dr. W. R. Wright and others to establish home for old men on Clinton Rd. near Jackson; will operate 50-acre farm, provide structure containing about 100 rooms, etc.

Mo., Valley Park.—Clubhouse.—Stix-Baer-Fuller Dry Goods Co., St. Louis, is reported to rebuild \$15,000 assembly building of Employees' Outing Club, noted burned.

N. C., Asheville.—Clubhouse.—Gay Green is reported having plans prepared for building, upper floor of which will probably be for club purposes. (See Stores.)

Okla., Enid.—Restaurant.—Kronopolis Bros. will erect restaurant building to replace Silver Moon Cafe, lately burned.

Tex., El Paso.—Barn.—Texas Company will erect barn and warehouse. (See Warehouses.)

RAILWAY STATIONS, SHEDS, ETC.

N. C., Madison.—Southern Ry., W. H. Wells, Ch. Engr. of Constr., Washington, D. C., and Norfolk & Western Ry. Co., J. E. Crawford, Ch. Engr., Roanoke, Va., are reported contemplating erection of union station.

SCHOOLS

Ark., Gum Springs.—School Trustees will erect building to replace structure noted burned.

Fla., Ralford.—Bradford County Board of Public Instruction, Starke, Fla., receives bids until Feb. 1 to erect school according to plans by E. C. Hasford & Co., Eastman, Ga.; plans and specifications from L. W. Lickliter, Starke, Fla.

Ga., Athens.—Trustees of State College of Agriculture are receiving plans and specifications for 2 buildings; live-stock judging

pavilion, 6 box stalls, office and dressing-rooms; Veterinary Science building to be used partly for manufacture of hog cholera serum; 2 stories and basement; both structures of cream pressed brick; tile roofs.

Ky., Louisville.—School Board is having plans prepared by J. Earl Henry, Louisville, for Wm. R. Belknap School at Wibben and Sills Aves.; fireproof; 2 stories and basement; 8 classrooms, gymnasium, auditorium, library, etc.; cost \$70,000.

Ky., Louisville.—Board of Education will remodel school on 6th St. between Walnut and Chestnut Sts., providing 13 rooms; fireproof and ordinary construction; composition roof; direct steam heat; lights from city plant; cost \$25,000; J. Earl Henry, architect, Louisville. (Lately noted to receive bids until Jan. 14.)

Ky., Mt. Sterling.—Montgomery County Board of Education is reported to erect consolidated high school for Gum Grove, Fairview, Comorgo and Greenbrier districts; plans call for 2-story structure.

La., Westlake.—Westlake School Directors have completed school lately noted except cement floor in basement; F. M. Hamilton, Supt., Lake Charles, La.

Mo., Bigelow.—Bigelow School Dist. is reported to have voted bonds to erect school. Address Dist. School Trustees.

N. C., Franklin.—School Trustees will erect school to replace Cowee High School recently burned; 5 rooms; cement block construction; metal roof; cost \$3000 to \$4000; construction to begin about March 1; M. D. Billings is interested. (Lately noted.)

S. C., Charleston.—Board of Public School Commrs. receives plans, drawings and specifications through A. B. Rhett, Supt., until March 1 for remodeling Crafts School to provide not more than 20 nor less than 16 classrooms, principal's office, teachers' retirement room and assembly hall, etc.; cost not to exceed \$25,000.

S. C., Clemson College.—Clemson College will have plans ready for contractors about Jan. 20 and will receive bids about Feb. 1 to erect previously-noted Y. M. C. A. building; 2 stories and basement; ordinary construction; Spanish tile roof; steam heat; electric lights; cost about \$75,000; R. E. Lee, Archt., Clemson College; indefinitely postponed erection of hospital building lately noted.

S. C., Spartanburg.—School Dist. of Spartanburg, H. E. Ravenel, Secy.-Treas., will erect school in North Side; ordinary construction; size undetermined; cost \$35,000; architect not engaged nor plans called for; construction probably to begin in spring.

Tenn., Briceville.—Anderson County Court, Clinton, Tenn., appropriated \$5000 to erect high school. Address County Commrs.

Tenn., Knoxville.—School Board will soon let contract to erect proposed school at Oakwood; cost \$40,000.

Tenn., Knoxville.—University of Tennessee will construct athletic field, with baseball diamonds, football field, quarter-mile cinder path, 4 or 5 tennis courts, bleachers, grandstands with total seating capacity of 8000; grading work to cost \$8000 to \$12,000; plans also include erection of clubhouse, etc.

Tenn., Knoxville.—Board of Education will erect 4 additional rooms to Rose Ave. school and first unit of Glenwood school; has \$36,000 available.

Tenn., Knoxville.—Knox County Grammar School Board will receive bids to erect schools at Camp Grove, Beaumont and Smithwood; 2 stories and basement; brick veneer; first 2 to cost \$15,000 each; latter to cost \$5000. (Previously noted.)

Va., Abingdon.—Stonewall Jackson Institute, Rev. Mr. McCue, Pres., is having tentative plans prepared by Flournoy & Flournoy, 701 Wilkins, Washington, D. C., for building to contain dormitory, dining hall, chapel, gymnasium, etc.; 220x44 ft.; 3 wings, 40x72 ft.; 3 stories; brick; slate roof; steam heat; electric light; cost about \$100,000. (Lately noted.)

Va., Roanoke.—Common Council authorized election of \$100,000 school bonds. Address The Mayor.

W. Va., Huntington.—Board of Education, Independent Dist. of Huntington, receives bids as follows, through James K. Oney, Secy., until Feb. 5 to erect high school: (1) For labor and material to erect structure complete according to plans and specifications by Verus T. Ritter, Carnegie Library Bldg., and on file at office of said architect and J. K. Oney, Secy., both of Huntington; also Builders' and Traders' Exchanges of Pittsburgh, Chicago, Baltimore, Washington, D. C., and New York; (2) material and labor for installation complete of equipment

for said building; (3) material and labor to install plumbing, gasfitting, slate work, heating and ventilating equipment according to separate plans and specifications prepared by Mr. Ritter and on file as above; bids on items 1 and 3 from same person not considered; structure to be fireproof; steel girders and trusses encased in concrete; granite base; brick and terra-cotta trim; 3 stories above ground floor; site 245x140 ft.; monumental staircases and granite steps; auditorium to seat 1400; steam and air mechanical system; manual training, domestic science and gymnasium equipment; showers; cost \$300,000. (Previously noted.)

W. Va., Parkersburg.—Parkersburg Independent School Dist., G. D. Heaton, Secy. Board of Education, votes Feb. 11 on recall of \$300,000 bond issue previously voted and will vote on \$250,000 bonds for schools in lieu thereof; F. L. Packard, Archt., Hayden Bldg., Columbus, O. (Previously noted.)

W. Va., Salem.—Salem College Directors will rebuild gymnasium and music department building lately burned; cost \$25,000. (Lately noted.)

STORES

Ala., Birmingham.—Mrs. Lucy Hudgins (W. B. Leedy & Co., representatives) has plans by H. B. Wheelock, Birmingham, for building to replace burned structure occupied by Steele-Smith Dry Goods Co.; 5 stories with basement; reinforced steel and concrete; pressed brick facing; cost about \$75,000. (Lately noted.)

Ark., McGehee.—C. Land and J. Poye will, it is reported, erect brick buildings.

Ark., Texarkana.—Presbyterian Book Store will erect \$35,000 structure.

Fla., Clearwater.—W. F. Spurlin will erect 3-story business and apartment building.

Ga., Ashburn.—W. A. Murray will rebuild store building reported burned at loss of \$20,000.

Ga., Augusta.—Junior Order of American Workmen will erect store and lodge building. (See Association and Fraternal.)

Ga., Lagrange.—Mrs. Harvey Hill, Atlanta, and Mrs. J. E. Lane, Lagrange, let contract to H. W. Caldwell, Lagrange, to repair store building on Court Square; 2x135 ft.; ordinary construction; tin roof; lighting plant to cost \$100; construction begun; work to include steel ceilings, rift floors, prism and plate-glass front, skylights, etc.; cost \$2500. (Lately noted.)

Ga., Macon.—A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta, is preparing plans to remodel building at 3d and Cherry Sts. for occupancy of McClure Ten Cent Co., Atlanta; 2 stories and basement; composition roof; steam heat; electric fixtures; possibly erect additional story; cost \$5000 to \$6000; bids received in about a week.

Md., Baltimore.—Co-operative Store Co. of Baltimore will remodel building for store. (See Apartment-houses.)

Md., Baltimore.—Fidelity & Deposit Co., Fidelity Bldg., will erect addition to building nearing completion at 214 N. Charles St.; 3 stories, 20x103 ft.; fireproof; slag roof; electric light; cost about \$25,000; Baldwin & Pennington, Archts., 601-7 Professional Bldg.; Morrow Bros., Contrs., Fidelity Bldg., both of Baltimore.

Mo., Knobview.—R. M. Cardetti will erect store building to replace structure noted damaged by fire; 34x36 ft.; brick; galvanized roof.

Mo., West Plains.—Aid Hardware Co. is reported having plans prepared by T. E. Mitchell, Jonesboro, Ark., for building; 60x140 ft.; full concrete basement.

N. C., Asheville.—Dr. E. Reid Russell, Asheville, N. C., will rebuild structure at 18 W. 5th St. noted burned at loss of \$75,000.

N. C., Asheville.—Gay Green is reported having plans prepared for building at College and Penland Sts.; 3 stories; fireproof; Indiana limestone, concrete or pressed brick; granite columns at entrance; tile foyer; lower floor and basement for store for Green Bros.; upper floors probably for clubrooms; cost \$35,000.

N. C., Lexington.—Lexington Hardware Co. will rebuild store building lately noted burned.

Okla., Leedy.—G. S. Webber will erect store building on Main St.; 24x60 ft.; brick; probably tar and gravel roof; other details not determined. (Lately noted.)

Tenn., Harriman.—Grady Corman will erect pressed-brick store building; 25x82½ ft.; 12-ft. ceiling; completion by April 1.

Tenn., Knoxville.—T. E. Burns Co. has plans by Albert B. Baumann, Knoxville, to remodel store building; 50x137 ft.; steam

heat; electric lights; electric freight elevator; cost about \$10,000.

Tenn., Knoxville.—T. E. Burns & Co. have plans by A. B. Baumann, Knoxville, to remodel Borches Bldg.; will underpin, provide 10-ft. basement with concrete floor; install heating plant, plate-glass windows, front, etc.

Tex., Ballinger.—John F. Curry will erect store building to be occupied by D. Reeder; 30x120 ft.; gravel roof; electric lights; concrete sidewalks; will soon let contract. (Lately noted.)

Tex., Dallas.—R. H. Stewart will expend \$7500 to repair building at 1300-1302 Main St.

Tex., Dallas.—T. F. Frazier will erect two-story frame building at 5126 Columbia St.; cost \$7500.

Tex., Dallas.—J. W. Crotty and others are having plans and specifications prepared by Lang & Wittich, Dallas, for business and office building at Main and Martin Sts.; 10 stories; fireproof; cost \$150,000. (Lately noted.)

Tex., Denton.—J. Flow is reported considering erection of store building.

Tex., Denton.—W. B. McClurken will erect building to replace burned structure; probably fireproof; about 100x140 ft.; cost \$15,000; date of opening bids not determined. (Lately noted.)

Tex., Houston.—J. L. Mitchell will remodel building at 512 Fannin St. for stores and apartments; lower floor for stores; upper floor for apartments; elevator; cost about \$13,500.

Tex., Houston.—Pauline Wolff has plans by Finger & Bailey, Houston, for store building at Man and Congress Sts. for Krupp & Tully, Houston; 3 stories; fireproof; 12,000 sq. ft. floor space; brick and reinforced concrete; skeleton type construction; Elgin buff brick facing; show windows; copper awnings; frontage on Main St., 42 ft.; freight and passenger elevators; bids opened Jan. 15; construction to begin by Jan. 25. (Lately noted.)

Tex., Houston.—Shotwell & Harris, 604 Main St., have plans by Finger & Bailey, Houston, to remodel building; will construct show windows, provide additional storerooms, etc.; cost \$8000.

Tex., Houston.—Poplar Camp, Woodmen of the World, will erect store and lodge building. (See Association and Fraternal.)

Tex., Moody.—Charles Howard opens bids in about 30 days to erect store to replace structure lately noted burned; 80x130 ft.; tin roof; stoves; electric light; cement sidewalks.

Tex., Moody.—S. W. Rice, McLean, Okla., will erect structure to replace building lately noted burned on Main St.; probably 2 stories; 60x120 ft.; ordinary construction; tar and gravel roof; cement sidewalks; contract not to be let before 60 or 90 days; cost about \$8000.

Tex., Trinity.—W. T. Carter & Bro., Camden, Tex., let contract about Feb. 1 to erect store and office building to replace structure lately noted damaged by fire and occupied by G. C. Clegg at Railroad and Main St.; 25x100 ft.; brick; paper and gravel roof; stoves; electric wiring; cost \$8500; Earl Meekins, Archt.

Va., Richmond.—P. W. Hessberg will expend \$6300 to repair brick stores at 305-09 W. Broad St.

THEATERS

Fla., Jacksonville.—Standard Amusement Co. secured permit through H. S. Walker to erect theater; 1½ stories; brick; cost \$25,000.

Fla., Jacksonville.—H. S. Walker will erect theater on Ashley St.; 1½ stories; brick; cost \$25,000.

Tenn., Memphis.—Chas. E. Speer is reported to receive bids to erect moving-picture theater at Madison Ave. and Cleveland St.; 2 stories; brick; terra-cotta front; cost \$6000; John Galsford, Archt., Memphis.

Tex., Smithville.—A. Pye will erect theater; 44x80 ft.

Va., Bristol.—Goebel & Perryman are reported to erect motion-picture theater on State St.

WAREHOUSES

Md., Baltimore.—Baltimore Plumbing Supply Co., Isaac Frenkel, Pres., 1001 W. Baltimore St., has plans by Callis & Callis, 2065 Kennedy Ave., for warehouse on N. Central Ave.; 75x62 ft.; 2 stories and basement; brick; slag roof; bids opened Jan. 9.

Md., Baltimore.—Jno. H. Windfelter, Treas. National Sugar Mfg. Co., 607-21 Calvert Bldg., is reported to erect warehouse at Cheapside and Water St.

Md., Baltimore.—Geo. Behm & Sons, 2100 Boston St., will rebuild warehouse reported burned; loss about \$5000.

N. C., Wilson.—C. M. and R. B. Fleming acquired block in which Banner Warehouse is located and will double size of structure.

S. C., Conway.—Planters' Tobacco & Storage Warehouse Co. Incptd. with \$10,000 capi-

tal stock by J. R. Bowles, W. P. Hardwick and H. H. Woodward.

Tex., El Paso.—Texas Company, Houston, Tex., will erect brick warehouse and barn; cost \$6000.

Tex., Galveston.—Merchants & Planters' Compress & Warehouse Co. will soon let contract to erect 10 additional sheds for cotton storage; to cover area 300x200 ft.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—Fenton G. and Berkeley L. Saunders have plans by Merrill T. Vaughn and let contract to Ed McGee, 729 15th St. N. W., Washington, to erect apartment-house at 2371-7 Champlain St. N. W.; 5x8 ft.; 2 stories; brick; slag roof; steam heat; electric light; cost \$34,000.

Mo., St. Louis.—James Rader let contract to erect store and tenement-house. (See Stores.)

Mo., St. Louis.—Mrs. L. Marting let contract to F. A. Darr & Son, St. Louis, to erect 2-story tenement-house at 3945 Labadie St.; cost \$5400.

ASSOCIATION AND FRATERNAL

Ala., Huntsville.—Baxter Bros., Huntsville, have contract to erect Y. M. C. A. and Woman's Welfare Bldg.; contract let to W. T. Hutchins, Huntsville, for steam heating and plumbing; reinforced concrete and stucco; 2 stories; composition shingle roof; cost \$30,000; Edgar L. Love, Archt., Jefferson County Bank Bldg., Birmingham. Address Contractors. (Lately noted.)

W. Va., Charleston.—A. F. & A. M. are reported to have let contract to J. E. Moss Iron Works, Wheeling, W. Va., for structural iron for improvements to building; H. Rus Warne and David Dick, Archts., both of Charleston; total reported cost, \$50,000. (Lately noted.)

BANK AND OFFICE

Ala., Piedmont.—Farmers and Merchants' Bank let contract to Morgan & Bros., Piedmont, to erect bank building; 2 stories; 22x54 ft.; mill construction; tar and gravel roof; electric lights; cement sidewalks; cost \$2500; Lloyd T. Morgan, Archt., Piedmont. (Lately noted.)

Md., Baltimore.—Provident Savings Bank, Howard and Saratoga Sts., let contract to Gladfelter & Chambers, 2074 Woodberry Ave., Baltimore, to erect branch banking-house at Hickory Ave. and 36th St.; 22x32 ft.; brick and stone; slate roof; hot-air heat; electric light; Ellicott & Emmart, Archts., 1102 Union Trust Bldg., Baltimore. (Lately noted.)

S. C., Spartanburg.—Hoggson Bros., 7 E. 4th St., New York, Genl. Contr. for First National Bank Bldg., let contract to E. L. Stallings, Spartanburg, for plumbing and heating equipment, and Brill Electrical Co., Spartanburg, for electrical work and fixtures; cost of building without mechanical equipment, \$27,500; O. V. Vatter, Archt., 5 E. 4th St., New York. (Lately detailed and other contracts noted.)

Tex., Galveston.—H. Mosle let contract to erect store and office building. (See Stores.)

CHURCHES

Ala., Birmingham.—Church of the Advent let contract to P. E. Bostick, Birmingham, to erect parish-house; Harry B. Wheelock, Archt., Birmingham.

Mo., St. Louis.—Union Methodist Episcopal Church let contract to Wm. Elias, 4245 Finney Ave., St. Louis, to remodel building on Delmar Ave., near Grand Ave., for church; plans include enlarged choir loft, exterior repairs, roofing, etc.; cost about \$8000; E. E. Christopher, Archt., 5918 Maple Ave., St. Louis. (Lately noted.)

Va., Norfolk.—South Norfolk Baptist Church let contract to A. S. Johnson, 20 Lafayette Ave., South Norfolk, to erect building at Chesapeake Ave. and Guerriere St.; 95 ft. 4 in. by 75 ft. 10 in.; fireproof; slate roof; hot-water heating plant to cost about \$1100; electric lights, \$400; concrete sidewalks; cost \$15,000, exclusive of mechanical equipment; subcontracts to include bricklaying (contract let to A. B. Sawyer), heating and roofing to cost \$1200; latter two contracts not yet let; G. W. Overman, T. M. Kriess, A. A. Mores, trustees; construction begun. (Previously noted.)

CITY AND COUNTY

Fla., Jacksonville.—Jail, etc.—Duval County Commrs. let contract to erect criminal court

building, jail and jailer's residence and courthouse to W. P. Richardson & Co., Jacksonville, at \$185,000 and \$164,000, respectively. (Lately noted.)

COURTHOUSES

Ala., Andalusia.—Covington County Board of Revenue let contract to Falls City Construction Co., Louisville, Ky., to erect courthouse; 3 stories and basement; fireproof; cost \$125,000 to \$150,000; W. L. Stevens, Archt., 2d floor Liverpool & London & Globe Bldg., New Orleans. (Lately noted.)

Fla., Jacksonville.—Duval County Commrs. let contract to erect courthouse to W. P. Richardson & Co., Jacksonville, at \$164,000. (See City and County.)

DWELLINGS

Ala., Birmingham.—Birmingham Realty Co. let contract to C. W. Brown, Birmingham, to erect 2-story frame residence; cost \$6000.

Ala., Birmingham.—W. S. Moughten let contract to C. W. Brown, Birmingham, to erect residence; 2 stories; frame; furnace heat; tile roof; Wm. T. Warren, Archt., Birmingham.

D. C., Washington.—C. H. Parker has plans by A. S. J. Atkinson for and let contract to R. P. Whitby, Union Trust Bldg., Washington, to erect dwelling at 334 E St. S. W.; 16x34 ft.; brick; tin roof; cost \$4000.

D. C., Washington.—Mrs. Luella Whaley has plans by Thomas M. Medford and let contract to J. F. Mills & Bro., 907 Shepherd St., Washington, to erect dwelling at 1333 Gallatin St. N. W.; 24x35 ft.; 2 stories; frame; slate roof; cost \$5000.

D. C., Washington.—R. W. and B. H. Wheats have plans by Jno. Henderson, Jr., for and let contract to J. W. Powell, 623 6th St. N. E., to erect dwelling at 1443 Madison St.; 26x29 ft.; 2 stories; frame; slate roof; cost \$4500.

D. C., Washington.—W. H. Roland Drury has plans by A. E. Landvoigt, 1333 G St. N. W., for and let contract to Shannon & Luchs, 713 14th St., Washington, to erect 3 dwellings at 1711-15 Willard St.; 2 stories; 17x35 ft.; brick; slag roof; cost \$8946.

Fla., Tampa.—W. J. Bennett, Weather Bureau, Tampa, let contract to W. D. Dinning, Tampa, to erect residence at 829 S. Boulevard; 2 stories; 36x32 ft.; ordinary construction; asphalt slate-covered shingle roof; electric lights; cost \$3800; plans jointly by owner and contractor. (See Machinery Wanted.)

Fla., Winter Park.—Harley B. Gibbs let contract to Hanner Bros., Orlando, Fla., to erect bungalow; L. Percival Hutton, Archt., Orlando. (Lately noted.)

La., New Orleans.—Security Homestead Association is reported to have let contract to Edwin L. Markey, New Orleans, to erect 2-story frame building; cost \$3000.

Md., Roland Park.—Dr. Jos. C. Bloodgood has plans by Bayard Turnbull, 328 Charles St., Baltimore, and let contract to Raymond E. Chambers, 36th and Roland Aves., Baltimore, for dwelling; 58x38 ft., with wing 27x24 ft.; hollow tile; slate roof; hot-air heat; electric light; cost \$15,000. (Lately noted.)

Va., City Point.—E. J. Dupont DeNemours Powder Co., Wilmington, Del., let contract to C. W. Hancock & Son, Lynchburg, Va., to erect 61 dwellings for employees at cost of \$100,000; ordinary construction; shingle roofs; lighting plant built by owner; general contractors will possibly let subcontracts for electric wiring, plumbing, plastering, heating, etc., and they may be addressed; North American Construction Co., Archt., Bay City, Mich.

GOVERNMENT AND STATE

Ga., Thomasville.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract at \$55,500 to Westchester Engineering Co., 6 Grand St., White Plains, N. Y., to erect post-office; brick, stone and terra-cotta facing; 64x55 ft.; 2 stories; fireproof floors; composition roofing; steam heat; electric lights;

subcontracts (not let) include roofing and sheet metal, iron work, granite and terra-cotta. Address contractor. (Lately noted.)

HOTELS

Ga., Savannah.—Hicks Hotel Corp. let contract at \$105,000 to Wise Granite & Construction Co., Richmond, Va., to erect hotel; 9 stories and cellar; fireproof; 60x90 ft.; terra-cotta and marble front; steel frame; dining-room 30x90 ft.; lobby 50x30 ft.; H. W. Witcover, Archt., Savannah. (Previously noted.)

Tenn., Nashville.—Robert H. Meyer, Birmingham, Ala., owner of Hermitage Hotel, Nashville, is reported to have leased Maxwell House and to have let contract to Birmingham Realty Construction Co., Birmingham, to repair.

MISCELLANEOUS

W. Va., Pennsboro.—Barn.—Riggs & Maire let contract to Star Lumber Co., Pennsboro, to erect livery barn.

HOSPITALS, SANITARIUMS, ETC.

Okla., Enid.—Polk Chansler let contract to Mr. Robinson and C. W. Wheeler, Enid, to erect veterinary hospital to be operated by Drs. Smith.

SCHOOLS

Ala., Huntsville.—City let contract to Baxter Bros., Huntsville, to erect school; one story; stucco; composition shingle roof; cost \$7500; Edgar L. Love, Archt., Birmingham, Ala. Address Contractors.

Fla., Fort Lauderdale.—City let contract at \$40,957 to Biscayne Construction Co., Miami, Fla., to erect school; W. C. DeGarmo, Archt., Miami. (Previously noted.)

Tenn., Camden.—High School Building Com. has plans by and let contract to L. M. Weathers, Memphis, Tenn., to erect high school; 2 stories; brick; steam heat; electric lights; fireproof; iron or slate roof; cost \$20,000. (Previously noted.)

Tenn., Knoxville.—Knox County Industrial School, A. L. Chavannes, Chrmn. of Building Committee, has plans by Chas. I. Barber and let contract to Toms & Peckenpaugh, all of Knoxville, to erect 4 dormitories; to accommodate 25 students each; 2 stories; brick veneer; hot-air heat; slate or shingle roof; electric lighting; cost \$4000 each. (Lately noted.)

Tex., El Paso.—School Board let contract at \$105,990 to J. E. Morgan, 209 N. Kansas St., El Paso, for skeleton of high school, including construction of all plain and reinforced concrete work, except outside steps, above the finish grade of 390 ft., and all inside stairs, also all steel tubes for stair work and steel work necessary to make concrete structure complete; fireproof; Barrett or Johns-Manville roofing; hot-blast steam heat to cost \$30,000; will soon let contracts for electric wiring, etc.; total cost without mechanical equipment, \$340,000; Trost & Trost, Archts., El Paso. (Lately noted.)

Tex., Houston.—School Board let contract to James Shapley & Sons, Houston, to erect Southland School; fireproof; reinforced concrete basement; main story buff brick; metal roof; concrete stairways; Lane & Dowdy, Archts., Houston.

W. Va., Athens.—State Board of Control is reported to have let contract to J. E. Moss Iron Works, Wheeling, W. Va., for structural iron for additions to State Normal School; H. Rus Warne, Charleston, W. Va. (Previously noted.)

STORES

Ala., Birmingham.—Alex. Contos let contract to C. W. Hadnott, Birmingham, to remodel 2-story brick building; cost \$5000.

Ark., McGehee.—Sam Wolchansky let contract to erect 2-story brick building; 2 stories.

Fla., Bartow.—T. A. Goode let contract to J. J. Johnson, Bartow, to erect 1-story brick building.

Fla., Crystal Springs.—Crystal Springs Mercantile Co. let contract to J. H. Davis, Crystal Springs, to erect store building; S. C. Singleton, Jr., Archt., Crystal Springs. (Lately noted.)

Miss., Jonestown.—Dr. John T. Longino and Mrs. Gannon let contract to Williams & Estus, Jonestown, to erect stores on Main St. to replace structures lately noted damaged by fire; 25x50 ft.; brick fire walls; composition roofing; stoves; gasoline lights; concrete sidewalks; will open bids at once for 3 stores; cost \$9000; R. C. Williams, Archt., Jonestown. (See Machinery Wanted.)

Mo., St. Louis.—Kline Cloak Co. let contract to T. Segel, St. Louis, to erect store

building at 606-08 Washington Ave.; 4 stories; cost \$50,000.

Mo., St. Louis.—James Rader let contract to G. Schake, St. Louis, to erect 2-story store and tenement-house at 4709-02 Gravois St.; cost \$9000.

N. C., Gastonia.—Long Bros. let contract to J. E. McAllister, Gastonia, to remodel building at 126 Main St. for stores; ordinary construction; tin roof; low-pressure steam heat; electric lights; cost \$4000; Hook & Rogers, Archts., Charlotte, N. C.

N. C., Kannapolis.—B. L. Umberger, Concord, N. C., will erect building to replace structure lately noted burned; 120x40 ft.; 4 storerooms; concrete walls; Carey roofing; electric lights; construction to begin in March; Ernest Lorrey, subcontractor; cost \$3000. (See Machinery Wanted.)

Tex., Dallas.—Henry Rosen and Sam Hymes let contract to R. L. Lowry, Dallas, to erect building on Central Ave. near Swiss Ave. for small stores; 90x40 ft.; cost about \$4000; Lang & Wittich, Archts., Dallas.

Tex., Dallas.—L. Lipsitz, Dallas, and A. Harris, New York, are having plans prepared by C. D. Hill & Co., Dallas, for store building on Elm St. near Harwood St.; architects wire Manufacturers Record: "Structure for Rodgers-Meyers Furniture Co. exclusively; 60x200 ft.; 6 stories and full basement; reinforced concrete; 2 elevators; steam heat; electric wiring; sprinkler system; front of stone, brick and terra-cotta; metal frames and sash; total cost about \$150,000."

Tex., Galveston.—H. Mosle let contract to E. O. Fisher Building Co., Galveston, to erect store and office building on Avenue C; 2 stories; brick; fireproof; white enamel brick front; lower floor for stores; upper floor for offices; cost \$40,000.

Tex., Rockport.—Wm. Mayer let contract to erect business building.

Va., Pocahontas.—Thomas Bros., Inc., Marion, Va., let contract to Carlin, Clark & Walker, Bramwell, W. Va., and Pocahontas, to rebuild burned structure.

THEATERS

N. C., Charlotte.—F. D. Alexander let contract to J. A. Gardner, Charlotte, to remodel building at 13 W. Trade St. for theater, etc.; 34x104 ft.; ordinary construction; metal roof; cost about \$12,000; construction begun.

N. C., Charlotte.—J. E. Simpson, owner of Ideal Theater, Gastonia, N. C., leased structure at 13 W. Trade St. and let contract to remodel for moving-picture theater at cost of \$10,000 to \$15,000; to be known as The Broadway; seating capacity of 600 to 1000; completion by Mch. 15.

WAREHOUSES

D. C., Washington.—W. S. Hoge & Bro. have plans by and let contract to P. B. Hoge, 915 Louisiana Ave. N. W., Washington, to erect warehouse at 608 C St. N. W.; 196x75 ft.; brick and concrete; galvanized iron roof; cost \$7500.

La., New Orleans.—Jefferson Construction Co., New Orleans, general contractor to erect cotton warehouses for Board of Port Commissioners at \$994,646, let following subcontracts: Sand, gravel and cement, J. W. Thompson, St. Louis and New Orleans (Southern States cement, manufactured by Southern States Portland Cement Co., Rockmart, Ga., being used); 1500 tons steel structural work, McClintic-Marshall Construction Co., Pittsburgh; 6,400,000 lbs. corrugated bars, Corrugated Bar Co., Buffalo, N. Y.; sheet metal work, including windows, Kalamine doors, etc., American Sheet Metal Works; 6565 squares 3-ply built-up roofing, Kracke & Flanders Co.; electric installation, Barnes Electric Construction Co.; 9000 creosoted piles, Creosoted Wood Block Paving Co., and driving said piles to Thomas Carey, Jr., all of New Orleans; painting and paving contracts not to be let for several weeks; Ford, Bacon & Davis, Engrs., 921 Canal St., New Orleans; 2 warehouses to be completed by Aug. 1 and 2 by Oct. 1. (Details lately noted.)

Md., Baltimore.—Baltimore Gas Appliance & Mfg. Co., Bayard and Hamburg Sts., let contract to Benj. F. Bennett Building Co., 123 S. Howard St., Baltimore, to erect warehouse at Bayard and Nanticoke Sts.; 215x135 ft.; brick; slag roof; cost \$36,350; plans by Engineering Dept. Consolidated Gas, Electric Light & Power Co., Lexington and Liberty Sts., Baltimore. (Lately noted.)

N. C., Salisbury.—Kessler Mfg. Co. let contract to Holbrooks & Bradshaw, Salisbury, to erect warehouse 60x120 and 90x100 ft.; mill construction; Barrett's roofing; cost \$9000. (Lately noted.)

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Birmingham.—Alabama Great Southern Railroad has been granted franchise to lay second track in Birmingham. C. Dougherty, Cincinnati, O., is Ch. Engr.

Ark., Murfreesboro.—Memphis, Dallas & Gulf R. R. is preparing to lay 16½ mi. of track to close the link north of Murfreesboro and finish the line for operating trains through to Hot Springs before March 1. W. W. Brown, Nashville, Ark., is Pres.

Fla., Green Cove Springs.—Dowling-Shaubs Lumber Co. and others are reported interested in a plan to build a railroad from Green Cove Springs to Starke, Fla., about 25 mi.

Fla., Miami.—Application has been made to charter the Palm Beach & Everglades Ry. Co. to build a line about 40 mi. long from West Palm Beach to Lake Okechobee, as heretofore planned by J. A. Moore and others. Capital not stated. Chas. H. Baker of New York is Pres.; H. G. Geer of West Palm Beach, Fla., V.-P.; James A. Moore, Hotel Halcyon, Miami, Gen. Mgr.; W. H. DaCamera, Secy.; T. J. Campbell, Treas.; both of West Palm Beach; other directors being W. H. Bolles of Jacksonville, Fla.; J. B. McGinley, Geo. W. Potter, T. T. Reese, Geo. G. Currie, M. E. Gruber, H. P. Dye, Geo. B. Baker, Geo. O. Butler and M. B. Lyman of West Palm Beach and W. M. Butterworth of Miami.

Ga., Meigs.—Swift Lumber Co. is reported planning to extend its railroad from Meigs to Moultrie, Ga., about 20 mi.

La., Monroe.—Arkansas, Louisiana & Gulf Ry. Co., capital \$5000, which may be increased to \$600,000, is reported chartered as a result of merger of the former railroad of the same name, and the Ashley Drew & Northern Ry. of Arkansas, previously noted. An extension from Monticello, Ark., to Pine Bluff, 40 mi., may be made. Headquarters at Crossett, Ark. James M. Parker of Monroe is named as Pres. and Gen. Mgr.; S. W. Meeks of Richmond, Va., and A. F. Hancock of New York, V.-P.'s; James F. Allen of the same city, V.-P. and Treas.; A. D. Nichols of Monroe, Secy. They and the following compose the board of directors: Albert E. Hartman and Patrick Ryan of New York, E. C. Bataille of Newark, N. J.; B. W. Griffith of Vicksburg, Miss., and Geo. W. Rogers of Little Rock, Ark.

Miss., Union.—Meridian & Memphis Ry., S. A. Neville, V.-P., Meridian, is reported preparing to begin construction of extension Union to Sebastopol, Miss., 15 mi., which may be extended 18 mi. farther to Carthage, Miss. Purdue Construction Co. is contractor.

John T. Schley of Mobile, Ala., is Pres. of the railroad.

Mo., St. Louis.—Concerning report that the St. Louis & San Francisco R. R. would spend \$1,000,000 to improve grades and alignment during the year on its Southern lines, W. C. Nixon, Recr. and Ch. Operating Officer, says there is no new construction contemplated.

Tex., San Angelo.—Kansas City, Mexico & Orient Ry. has closed a contract with railroad committees at San Angelo to build its line into Christoval, about 15 mi. south, by July of next year, and to Eldorado, Tex., 15 mi. farther, a year later. It is said the company will really complete from San Angelo to Sonora, Tex., via the other two points, 45 mi., within a year. W. W. Colpitts, Kansas City, Mo., is chief engineer.

Va., Tye River.—Construction has begun by company forces on the Virginia-Blue Ridge R. R. from Tye River to Massey's Mill, 18 mi. One tunnel of standard size and trestle work amounting to 700,000 board measure feet. Route follows watercourse through foothills of Blue Ridge. John W. Dwight, Ithaca, N. Y., is Pres.; R. G. Leftwich, Lynchburg, Va., V.-P.; Frank Lathrop, Gen. Mgr.; A. K. Murrell, Tye River, Ch. Engr.

Va., Lynchburg.—Southern Ry. is reported getting bids on construction of second track between Orange and Charlottesville, Va., about 28 mi. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

W. Va., Charleston.—Charleston-Dunbar Traction Co. contemplates construction, it is reported, of about 18 mi. of line this year. E. W. Alexander is Gen. Mgr. at Charleston.

STREET RAILWAYS

Ala., Birmingham.—Henry Key Milner, Pres. Milner Land Co., has applied to the City Commission for a street-railway franchise to build a line from 15th Ave. and 20th St. south to Key Circle in the Land Company's new division.

Ala., Gadsden.—Alabama City, Gadsden & Attalla Ry. Co. contemplates some track improvements and the building of a loop. C. G. Zell, Gadsden, is Mgr.

La., New Orleans.—New Orleans Ry. & Light Co., says a report, is making plans to build about 11 mi. of new track. M. S. Sloan is Gen. Mgr.

S. C., Charleston.—Charleston Consolidated Railway & Lighting Co. will, it is announced, build an extension of its railway in North Charleston. Smith & Kyle have the grading contract. P. H. Gadsden is Pres. Louis Y. Dawson is Ch. Engr.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Agricultural Implements.—See Machinery and Tools, Thos. W. Troy & Co.

Air Compressors.—W. M. Stephenson, Gen. Mgr., Riverside Oil Co., 1303 Southwestern Life Bldg., Dallas, Tex.—Addresses of manufacturers of "air compressors, rotary air compressors, gasoline and compressors combined."

Aluminum Checks.—See Brass Checks, etc.

Asphalt Binder.—See Paving Materials.

Automobiles.—See Truck (Auto).

Automobiles.—See Manufactures Generally, A. Marchis.

Boiler.—See Hoisting Engine, Fred Norwood Wilson.

Boiler.—Jes. L. Pearson & Sons, Route 2, Keyesville, Va.—Prices on 40 to 75 H. P. water-tube boiler; second-hand; good condition.

Boilers.—See Electric Plant, Treasury Dept.

Box Machinery.—See Woodworking Machinery, Frank B. Nihart.

Bricks.—Baltimore (Md.) Board of Awards.—Bids at office City Register, City Hall, until Jan. 20 to furnish 415,000 bricks of various qualities; specifications obtain-

able at office Sewerage Com., Chas. England, Chrmn., 904 American Bldg.

Brick Machinery.—See Machinery Generally.

Bridge Construction.—W. H. Tracy, Commr. of Public Works, Bradentown, Fla. Bids until Jan. 22 to construct lift bridge complete, including substructure, according to plans by Scherzer Rolling Lift Bridge Co., Chicago, on file with City Engr.; alternate proposals received on other types of movable span bridges, including substructure, bidder to furnish plans and specifications; plans and specifications obtainable from City Engr. for \$5.

Brass Checks, etc.—Paul & Cornell Co., Newsom, N. C.—Brass and aluminum checks for commissary purposes, carfare, etc.

Brass and Copper Parts.—Holl M. Voor Agentunzaken (Holland Cy. of Home and Foreign Agencies), Amsterdam, Holland.—Interested in high-class ornamental stamped (massive) brass and copper for manufacturing gas and electric lamps and furniture mounting in competition with Germany.

Bridges.—See Road Machinery, etc., W. R. Haegler.

Bronze Balls.—See Steel Sash, etc.

Building Materials.—Dr. John T. Longino, Jonestown, Miss.—Prices on building materials for stores.

Building Materials.—Dan River Lumber Co., T. J. Covington, Secy., Walnut Cove, N. C.—Prices on building materials of all kinds.

Building Materials.—E. M. Craig Engineering Co., Pulaski, Tenn.—Catalogues and price lists of all kinds of building materials.

Burners (Lamp).—See Lamps (Oil, Brass).—F. H. Hulscher.

Cable.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until January 26 for delivering single conductor cable at naval station, Key West, Fla. Apply for proposals to navy pay office, Key West, or to Bureau. Saml. McGowan, Paymaster-Gen., U. S. N.

Canning Machinery.—E. K. Eastham, Opelousas, La.—To correspond with manufacturers of machinery for canning plants.

Cars.—P. O. Box 770, Baltimore, Md.—20 4-yd. all-steel Koppel cars; 36-in. gauge.

Cars.—Suffield-Berlin Trap-Rock Co., 18 Asylum St., Hartford, Conn.—Cars for stone-crushing plant. (See Crushing (Stone) Plant.)

Cement Plaster.—See Plaster (Cement).

Cement Machinery.—See Machinery Generally.

Chemicals.—I. Slobotsky, 3a San Augustin No. 73, Mexico City.—Correspondence with manufacturers of chemicals; view to representation.

Clothing, etc.—St. Lucie County Commissioners, J. E. Fultz, Clerk, Fort Pierce, Fla.—Bids opened Feb. 2 to furnish clothing, shoes, coats, etc., for county convicts.

Clothing.—See Convict Cages, etc., Bronson, Fla.

Coal and Ash-handling Apparatus.—See Electric Plant, Treasury Dept.

Concrete Face Stones.—Baltimore (Md.) Board of Awards.—Bids at office City Register, City Hall, until Jan. 20 to furnish 110 concrete face stones for inlets; specifications obtainable at office Sewerage Com., Chas. England, Chrmn., 904 American Bldg.

Condensers.—See Electric Plant, Treasury Dept.

Convict Cages, etc.—Levy County Commissioners, A. P. Hardee, Clerk, Bronson, Fla.—Bids received at meeting Feb. 1 for convict cage, complete, 12 men capacity; 2 30-ft. tents, 4 mules, 20 suits convicts' clothes. (Previously noted as to be "Considered" at earlier session.)

Corn Sheller, etc.—F. M. Young Co., Fairfax, S. C.—Machine to shuck and shell corn.

Cots.—St. Lucie County Commrs., J. E. Fultz, Clerk, Fort Pierce, Fla.—Cots for convicts' use. (See Clothing, etc.)

Cotton Machinery.—See Renovators and Shredders.

Cotton Oil.—See Food Products.

Crane.—Chas. T. Lehman, Birmingham, Ala.—Full revolving locomotive crane; 10 tons; 40 ft. or longer boom; either with or without trucks, with one-yard clam-shell bucket.

Cranes (Locomotive).—See Crushing (Stone) Plant, Suffield-Berlin Trap-Rock Co.

Crane (Locomotive).—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—Tenton locomotive crane; second-hand.

Crane (Revolving).—Navy Dept., Bureau Yards and Docks, W. M. Smith, Acting Chrmn., Washington, D. C.—Opens bids Feb. 13 (date postponed from Jan. 16) on 150-ton floating revolving crane for navy-yard, Norfolk, Va., Spec. No. 2092.

Crushers (Rock, Gyratory).—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—Four second-hand gyratory rock crushers.

Crushers.—See Machinery Generally.

Crushing (Stone) Plant.—Suffield-Berlin Trap-Rock Co., 18 Asylum St., Hartford, Conn.—Stone-crushing plant, to include boilers, engines, crushers, screens, locomotive cranes, pumps, drills, cars, etc.; shipments to Suffield, Conn.

Dyestuffs.—I. Slobotsky, 3a San Augustin No. 73, Mexico City.—Data and prices on direct and sulphur dyestuffs, especially blacks and blues; correspondence with view to cash purchases and representation.

Dredge Bucket (Clam Shell).—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—Clam-shell bucket, capacity ¾ cu. yd.; second-hand.

Electric Plant.—Treasury Dept., O. Wenderoth, Supervising Archt., Washington,

D. C.—Bids to construct central heating, lighting and power plant under supervision of Treasury Dept.; plans and specifications to be ready for delivery on or after Jan. 15; bids to be submitted for plant building complete, with steel stacks, boilers, generating apparatus, pumping equipment, condensers, coal and ash-handling apparatus, steam and water piping, switching gear, tunnels, substation apparatus, etc. Prospective bidders should immediately submit to office applications for plans and specifications, stating portions of work upon which they will bid; if it appears that applicant is in position to bid on all of work in any one of sections of project, or upon entire work, plans and specifications will be forwarded; no plans or specifications will be furnished sub-bidders or others not in position to submit bid on all work comprised in at least one section; Dept. will allow about 15 days for preparation of estimates; at time plans and specifications are forwarded to bidders, date for opening bids will be stated, and this date will not be extended.

Electric-light Fixtures.—W. J. Bennett, Weather Bureau, Tampa, Fla.—Prices on electric-light fixtures for residence.

Electrical Equipment, etc.—J. Fritsch, 11 Blvd. Rochechouart, Paris, France.—Correspondence with manufacturers of electrical equipment, including machinery for lighting, power, etc.; view to representation.

Emery Wheel Stands.—See Specialty Manufacturing-Sales Corp.

Engine (Electric-motor or Gas).—Specialty Manufacturing-Sales Corp., Norfolk, Va.—Electric-motor or gas engine. (See Machinery.)

Engine (Corliss).—Minella Mills, E. T. Miller, Mgr., Randleman, N. C.—Interested in prices on good second-hand 75 H. P. Corliss engine.

Engine.—T. M. Phifer, Chrmn., Columbia, S. C.—Corliss engine, 18x12; Corliss engine of similar size to develop 200 H. P., 90 R. P. M., 110 lbs. steam pressure.

Engine.—W. H. Marshall, Elkton, Va.—Heavy draft slow burner engine, 80 to 100 H. P., for flour and grist mill.

Engine.—G. W. Parish, Littleton, N. C.—Engine and well driller. (See Well-drilling Machines.)

Engine (Gasoline).—Chas. Howard, Baxter, Ky.—Gasoline engine; 8 H. P. (See Grist Mills.)

Engines and Boilers.—See Crushing (Steam Plant), Suffield-Berlin Trap-Rock Co.

Engines (Gasoline or Oil).—W. M. Stephenson, Gen. Mgr., Riverside Oil Co., 1303 Southwestern Life Bldg., Dallas, Tex.—Addresses of manufacturers of gasoline or oil engines; also steam heads (for air or gas) for deep well pumping.

Excavation (Reclamation Service), etc.—Dept. of Interior, U. S. Reclamation Service, Washington, D. C.—Bids at office U. S. Reclamation Service, Provo, Utah, until Feb. 3 to construct about 158,000 yds. excavation, 7000 yds. concrete, etc., near Payson City, Utah, near San Pedro, Los Angeles & Salt Lake R. R. and Tintic branch of Denver & Rio Grande R. R.; for details, address U. S. Reclamation Service, Provo, or Washington, D. C.; A. P. Davis, director and chief engineer.

Felt or Wool Waste, etc.—Chas. R. Fife Co., 624 Central National Bank Bldg., St. Louis, Mo.—Delint and felt or wool cloth waste in quantities.

Flue Lining.—See Wall Coping, etc.

Flour.—Office Colonial de Representation Commerciale, Maison McCary, Point-a-Pitre, Guadeloupe.—To represent flour manufacturers; states can sell 30,000 to 40,000 sacks per month.

Flooring.—W. J. Bennett, Weather Bureau, Tampa, Fla.—Prices on bathroom floor covering.

Food Products.—Office Colonial de Representation Commerciale, Maison McCary, Point-a-Pitre, Guadeloupe.—To represent manufacturers of flour, cottonseed oil, petroleum oil, salted and canned meats, olive oil, butter, corn in the grain, biscuits, cakes.

Furniture (Church).—W. A. Rayfield & Co., P. O. Box 649, Birmingham, Ala.—Names and addresses of church furniture manufacturers.

Gas Franchise.—R. F. Williams, Secy., Chamber of Commerce, Burlington, N. C.—Correspondence relative to granting franchise for establishment of city gas plant.

Gears.—Tow-Lemons Mfg. Co., Cedar Hill, Tenn.—Cog and sprocket gears; also small screw thumb screw, 3 in. long and ½ in. diam.

Glass (Art).—W. A. Rayfield & Co., P. O. Box 649, Birmingham, Ala.—Names and addresses of art glass manufacturers.

Grist Mills.—Chas. Howard, Baxter, Ky. Gasoline engine of 8 H. P. and grist mill for grinding table meal, feed, etc.

Gutta-percha.—See Rubber (Hard), etc., II. Montanari.

Hauling Stone Chips.—Maryland State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Jan. 25 for hauling about 6219 tons stone chips for oiling State roads as follows: Worcester county, contract No. 1, 352 tons; Somerset, contract No. 2, 575 tons; Wilcomco, contract No. 3, 25 tons; Dorchester, contract No. 4, 267 tons; Caroline, contract No. 5, 945 tons; Talbot, contract No. 6, 450 tons; Queen Anne's, contract No. 7, 1150 tons; Kent, contract No. 8, 947 tons; Cecil, contract No. 9, 938 tons; specifications and plans on application.

Holisting Engine.—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—7x10 double drum holisting engine with boiler; second-hand.

Ice Machinery, etc.—Umatilla Ice & Storage Co., F. H. Price, Secy., Umatilla, Fla.—Late in Jan. will consider prices on equipment for 10-ton ice and refrigerating plant.

Ice Machines.—R. T. Graham, Belair, Richmond Gap, St. Michael, Barbadoes, W. I.—Ice machine of about 25 lbs. capacity; has electric power. Send prices and description.

Iron Products.—See Electrical Equipment, etc., J. Fritsch.

Iron and Steel Products.—See Manufacturers Generally, A. Marchis.

Lamp Parts.—See Brass and Copper Parts.

Lamps (Oil, Brass).—F. H. Hulscher, Tryon, N. C.—Correspondence with manufacturers of brass oil lamps (for homes); also burners used for such lamps and equipped for mantles.

Lathe and Shears.—Jos. L. Pearson, Route 2, Keysville, Va.—Patternmakers' lathe with shears and all attachments; not less than 16x10 in. between centers; second-hand or rebuilt.

Laundry Machinery.—C. L. Morris, Box 283, Murray, Ky.—Prices on laundry machinery; consider good used machinery.

Laundry Machinery.—E. K. Eastham, Opelousas, La.—To correspond with manufacturers of machinery for steam laundries.

Leather Strips.—Harry M. Hall, Box 113, Waynesville, N. C.—10,000 strips of leather 6 in. long, 1/2 in. wide and 1-16 in. thick. Will furnish samples and specifications.

Lumber.—See Steel Sash, etc.

Machinery.—See Manufacturers Generally, A. Marchis.

Machinery.—Specialty Manufacturing-Sales Corp., Norfolk, Va.—Late in Jan. in market for screw machine, milling machine (30-in. cut or travel), shaper, 1/2-ton punch, gang drill press, small drill press, one large and one small emery wheel stands, 2 bench vices, line shaft and pulleys, countershafts and pulleys, electric motor or gas engine; consider rebuilt or second-hand, highest type. Mail specifications to Mechanical Dept.

Machinery and Tools.—Thos. W. Troy & Co., export and import commission merchants, Puerto Cortes, Honduras, C. A. (A. W. Duckett & Co., agents, 17 Battery Pl., New York).—Catalogues and price lists on small machinery and tools for plantations, factories, workshops, etc.; supplies and all manufactured articles.

Machinery Generally.—Navas & Co., Engrs., Madrid, Spain.—Agencies for machinery of all kinds, including following: Gasoline motors, windmills, pumps, cement machinery, stone breakers, fine plaster machinery, presses for making brick out of cement, equipments for boring artesian wells, mining equipment, machinery for treating vegetable fiber.

Machinery Manufacturers.—A. B. Richards Medicine Co., Sherman, Tex.—To correspond with machinery manufacturers relative to furnishing machine to make article with paraffin base into sticks like candles, but without wick.

Manufactured Products.—See Machinery and Tools, Thos. W. Troy & Co.

Manufactures.—I. Slobotsky, 3a San Augustin No. 73, Mexico City.—Correspondence with view to representing manufacturers generally; interested in large business and not in small fancy lines.

Manufactures Generally.—A. Marchis, 2 Rue St. Marc, Paris, France.—To represent

sent manufacturers of bolts, iron and steel screws, tacks, nails, tools, machinery supplies, wagons, automobiles, polishing powder, emery cloth, portable houses, tanned leather, fish, bean, dried milk, beef tablets, hospital supplies, medical supplies, dry-goods, hosiery, shoes for soldiers; manufacturing machines, tools, supplies and equipment for street railways; iron manufactures, etc.

Metal Post Manufacturers.—G. McLaughlin, 531 Shaw Ave., Cincinnati, O.—Addresses of firms to manufacture metal fence posts on royalty basis or outright sale.

Milling Machinery.—See Machinery, Specialty Manufacturing-Sales Corp.

Mixers (Concrete).—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—Street machine concrete mixer; second-hand.

Mounting (Poster) Machines.—National Poster Mounting Co., 823 Perdido St., New Orleans, La.—Correspondence with manufacturers of poster mounting machines.

Motors (Gasoline).—See Machinery Generally.

Oil (Cottonseed).—H. Montanari, 51 Rue De Paradis, Paris, France.—Prices on cotton oil; view to representation. (Letter states: "Cotton oil, good mark, for sale to our African exporters.")

Paints and Varnishes.—H. Montanari, 51 Rue D. Paradis, Paris, France.—Prices on paints and varnishes for insulating purposes; view to representation.

FOR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

We issue every Business Day in the Year THE DAILY BULLETIN

The construction news as published in the Daily Bulletin is invaluable to all business people who want to keep in daily touch with the organization of business enterprises of all kinds throughout the whole South. Unlimited possibilities for the creation of business, for securing contract work, for the sale of machinery and supplies of all kinds, for bond buyers and others, are to be found through a close following up of the news in the Daily Bulletin.

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Paper Pulp Manufacturers.—C. L. Cobb, Elizabeth City, N. C.—Addresses of manufacturers of paper pulp.

Paving.—F. J. Von Zuben, City Engr., Fort Worth, Tex.—Bids until Jan. 19 to pave W. 10th St. from intersection with Monroe St.; width, 40 ft.; contain about 1650 sq. yds.; material to be bitulithic, rock asphalt or vitrified brick; proposal forms and specifications on file with City Engr.; J. H. Grant, Commr. of Street and Public Property.

Paving.—Baltimore (Md.) Board of Awards.—Bids at office of City Register, City Hall, until Jan. 20 for following grading, curbing and paving, all on concrete base: Contract No. 102, 21,000 sq. yds. vitrified block and 6720 sq. yds. granite block, on Franklin and George Sts. and Druid Hill Ave.; contract No. 103, 36,800 sq. yds. sheet asphalt, 11,750 yds. vitrified block, 11,250 yds. granite block and 900 yds. wood block, on Fremont and Druid Hill Aves. and George and Riddle Sts.; contract No. 104, 34,550 sq. yds. sheet asphalt, 15,800 yds. vitrified block, 2320 yds. granite block and 1650 yds. wood block, on Carey St. and Edmondson Ave.; contract No. 105, 20,500 sq. yds. sheet asphalt, 13,000 yds. vitrified block, 4560 yds. granite block and 900 yds. wood block, on Greene, Read, Dolphin, Lanvale and Mosher Sts.; approximate quantities; specifications, etc., on application office of Paving Com., R. Keith Compton, Chrmn. and Consult. Engr., City Hall; John Hubert, Acting Prest., Board of Awards.

Paving, etc.—Board of Public Affairs, Chas. E. Taylor, Prest., Little Rock, Ark.—

Bids until Jan. 21 for grading, paving, reinforced concrete handrail, curbing, sidewalks and street car track construction on W. 3d St. viaduct.

Paving Materials.—City, H. W. Kueffner, Engr., Durham, N. C.—Asphalt binder or some other suitable preparation for resurfacing macadam streets.

Piping.—See Electric Plant, Treasury Dept.

Piping.—See Water-works Construction, Asheville, N. C.

Piping.—See Road Machinery, etc., W. R. Haegler.

Pipe, etc.—Appalachian Marble Co., Knoxville, Tenn.—1800 lin. ft. 3 in. iron pipe with threads and couplings.

Planer.—See Woodworking Machinery, Dan River Lumber Co.

Planer.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Jan. 26 for delivering planer at navy yard, Boston, Mass. Apply for proposals to navy pay office, Boston, or to Bureau. Saml. McGowan, Paymaster-Gen., U. S. N.

Plaster (Cement).—Holland & Beamon Co., Box 512, Suffolk, Va.—Addresses of manufacturers of cement plaster in South and West.

Plaster Machinery.—See Machinery Generally.

Plugs (Wood).—Harry M. Hall, Box 113, Waynesville, N. C.—10,000 wooden plugs; head 3/4 in. diam., 5 in. long; will furnish samples and specifications.

Portable Houses.—See Manufacturers Generally, A. Marchis.

Press.—See Wheel and Axle Press.

Pump.—City of St. Louis, Mo., Room 315, New City Hall.—Bids until Jan. 22 to furnish general and detail drawings and erecting complete in place at H. S. Station No. 2, Bissell's Point, 20,000,000-gal. steam turbine-driven centrifugal pump with necessary appurtenances; plans and specifications on file with Board of Public Service.

Presses (Drill and Gang).—See Specialty Manufacturing-Sales Corp.

Pump (Sand).—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—Second-hand 6-in. sand pump.

Pumps.—See Machinery Generally.

Pumps, etc.—See Crushing (Stone) Plant, Suffield-Berlin Trap-Rock Co.

Pumping Equipment.—See Electric Plant, Treasury Dept.

Pumping Engines.—See Engines (Gasoline or Oil).

Pumping Plant.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Feb. 24 for material for pumping plant of Drydock No. 1, Balboa Terminals; blanks and general information relating to this circular (No. 891) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans; and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia,

Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Patty Chaser.—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—Second-hand patty chaser.

Retorts (Chemical).—C. M. Steinmetz, engineer, surveyor and millwright, Box 83, Washington, D. C.—Addresses of manufacturers of chemical apparatus, including retorts for making turpentine of wood refuse.

Railway Supplies.—See Electrical Equipment, etc., J. Fritsch.

Reinforcing Material.—See Wire.

Retaining Walls.—City of Houston, Tex., Ben Campbell, Mayor.—Bids at office City Secy until Jan. 18 to construct retaining walls on Louisiana St. between Texas and Prairie Aves.; specifications and information obtainable at office E. E. Sands, City Engr.

Renovators and Shredders.—Southwestern Mfg. Co., 323 E. California Ave., Oklahoma City.—Addresses of manufacturers of machinery for making waste; such as renovators and shredders.

Road Construction.—U. S. Dept. of Agriculture, Office of Public Roads, P. St. J. Wilson, Asst. Director, Washington, D. C.—Bids received by Chrmn., Board of Awards, at office of chief clerk, until Jan. 22 to construct experimental road on Mount Vernon Av., Alexandria county, from Military Rd. near Arlington Cemetery, about 4.5 mi., to corporate limits of Alexandria; about 29,000 cu. yds. excavation, 7650 cu. yds. gravel base, 42,000 sq. yds. bituminous surfacing; plans, specifications, etc., at office of Public Roads.

Road Construction.—Maryland State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Jan. 19 to construct one section, about 2.69 mi., concrete or macadam, from Linkwood to Mt. Holly, contract No. D-11; specifications on application and payment of \$1.

Road Machinery, etc.—W. R. Haegler, Civil Engr., Potosi, Mo.—Prices on road machinery, probably including contractors' plows, slips, wheelers and graders; also vitrified and corrugated culvert pipe, cement, and possibly few steel bridges.

Road Roller.—H. S. Jaudon Engineering Co., Savannah, Ga.—Rental and sale price on 5 or 6-ton tandem roller; second-hand; Iroquois preferred.

Road Rollers.—Fred Norwood Wilson, 331 W. 35th St., Chicago, Ill.—One 5-ton and one 10-ton road rollers; second-hand.

Roofing (Slate).—John T. Mason & Co., Hancock, Md.—Roofing slate; carload lots.

Rubber (Sheet).—W. M. Stephenson, Gen. Mgr., Riverside Oil Co., 1303 Southwestern Life Bldg., Dallas, Tex.—Addresses of manufacturers of sheet rubber.

Rubber (Hard), etc.—H. Montanari, 51 Rue De Paradis, Paris, France.—Prices on ebonite (also called hard rubber and vulcanite) in plates, rods and tubes; pipe stems, stylographs and office requisites; also gutta-percha in very thin tissue; view to representation.

Scows (Dump, Steel).—Panama Canal, F. C. Boggs, General Purchasing Officer, Washington, D. C.—Bids until Feb. 10 to furnish three 100-yd. steel dump scows; blanks and general information relating to this circular (No. 893) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans; and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Sewer Construction.—See Water-works, etc.

Screw (Thumb).—Tow-Lemon Mfg. Co., Cedar Hill, Tenn.—Small screw thumb screw, 3 in. long and 1/2 in. diam.

Sewer Construction.—City of Houston, Tex., Ben Campbell, Mayor.—Bids at office City Secy until Jan. 18 to construct 36-in. storm sewer, 350 ft. long, on Golf Link Place Private lane, from San Felipe St. north to gully; specifications and information obtainable from E. E. Sands, City Engr.

Sewer System.—See Water and Sewer Systems.

Sewer Construction.—City of San Antonio, Tex., Fred Fries, Clerk.—Bids until Feb. 1 to complete sanitary and storm sewers previously let to Wm. G. Schwirthe Co., approximately as follows: Cherry St. sanitary intercepting sewer, contract section No. 20, 3060 ft. 8-in., 1040 ft. 10-in., 350 ft. 12-in., 1764 ft. 15-in. and 458 ft. 20-in. vitrified sewer pipe, and 2730 ft. 30-in., 6090 ft. 36-in., 1065 ft. 39-in., 750 ft. 45-in., 2330 ft. 48-in. and 45 ft. 60-in. vitrified segmental blocks, with inlets, manholes, etc.; Grove Ave. storm sewer, contract section No. 112, 900 ft. 12-in., 700 ft. 15-in. and 350 ft. 18-in. No. 2 D. S. vitrified pipe, and 980 ft. 64-in., 740 ft. 72-in., 390 ft. 74-in. and 5020 ft. 76-in. plain monolithic concrete, with inlets, manholes, etc.; Cherry St. storm sewer, contract section No. 113, 2800 ft. 12-in., 750 ft. 15-in. and 650 ft. 18-in. No. 2 D. S. vitrified pipe, and 700 ft. 24-in., 430 ft. 28-in., 490 ft. 36-in., 1030 ft. 44-in., 390 ft. 50-in., 470 ft. 62-in., 590 ft. 64-in., 940 ft. 68-in., 2380 ft. 60-in., 1840 ft. 63-in., 300 ft. 74-in. and 2050 ft. 76-in. plain monolithic concrete, with inlets, manholes, etc.; separate proposals; blanks, specifications, etc., with Hans Helland, City Engr.

Screw Machine.—See Machinery, Specialty Manufacturing-Sales Corp.

Shafting and Pulleys.—Specialty Manufacturing-Sales Corp., Norfolk, Va.—Line shaft and pulleys, countershafts and pulleys. (See Machinery.)

Shaper.—See Machinery, Specialty Manufacturing-Sales Corp.

Shoes.—See Clothing, etc., St. Lucie County Comms., Fort Pierce, Fla.

Slate.—See Roofing (Slate.)

Spindles.—Harry M. Hall, Box 113, Waynesville, N. C.—Spindles in 4 sizes, from 3-16 to 3/4; will furnish samples and specifications.

Steel Library Equipment.—Comms. Dist. of Columbia, Room 509 Dist. Bldg., Washington, D. C.—Bids until Jan. 18 to furnish and install steel library equipment in Myrtilla Miner Normal School; specifications and form of proposal obtained from Purchasing Officer, Dist. of Columbia, Room 320 Dist. Bldg.

Steel Sash, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Jan. 26 for delivering at torpedo station, Newport, R. I., naval supplies as follows: Bronze and steel balls, bolts, flasks, gauges, lumber, steel sash. Apply for proposals to the navy pay office, Newport, R. I., or to the Bureau. Saml. McGowan, Paymaster-Gen., U. S. N.

Steam Heads.—See Engines (Gasoline or Oil.)

Steel Sash.—James Alexander Construction Co., 388 N. Front St., Memphis, Tenn.—Steel sash for pumping station; 3750 sq. ft.

Steel Trusses, etc.—Panama Canal, F. C. Boggs, General Purchasing Officer, Washington, D. C.—Bids until Jan. 29 to furnish steel trusses, steel cable, wire nails, chain shackles, sheet brass, drill bits, hose, packing, mop heads, window glass, wire glass, cant-hook handles, milk cans, butchers' blocks, agate pitchers, chinaware, glass pitchers, drinking glasses, spoons, toweling, crayons, notebooks, cardboard, binders' board, blotting paper, bond paper and manila tags; blanks and general information relating to this circular (No. 894) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Tents.—See Convict Cages, etc., Bronson, Fla.

Tools.—See Electrical Equipment, etc., J. Fritsch.

Tools.—See Manufactures Generally, A. Marchis.

Tools.—See Machinery and Tools, Thos. W. Troy & Co.

Truck (Auto.)—Newton Ice & Fuel Co., Newton, N. C.—Prices on auto truck, 2000 to 3000 lbs. capacity, for handling ice and coal.

Turpentine Machinery.—See Retorts (Chemical), C. H. Steinmetz.

Valves and Accessories.—Panama Canal, F. C. Boggs, Major, Corps of Engrs., U. S. A., Gen. Purchasing Officer, Washington, D. C.—Bids until Feb. 24 to furnish valves and accessories for drydock No. 1, Balboa Terminals; blanks and general information relating to this circular (No. 892)

may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Wall Coping, etc.—Acme Pressed Brick Co., Fort Worth, Tex.—To represent manufacturers of wall coping and flue lining.

Water-works Construction.—City of Asheville, N. C.—Bids at office F. L. Conder, City Clerk, until Feb. 12 to furnish and lay about 5850 ft. 10-in. cast-iron water pipe, class B, with specials, gates and hydrants; specifications at office of City Engr.; bids also asked on furnishing f. o. b. cars, Asheville, about 5850 ft. 10-in. cast-iron pipe, class B, about 186.5 tons.

Water-works, etc.—City Comms., Columbia, S. C.—Bids until Jan. 29 to extend water-works and sewer system; about 10 mi. water mains from 6 to 12 in. and 10 mi. sewer main 8 to 15 in.; specifications, proposal forms and plan on file with F. C. Wyse, Engr.-Supt., or will be mailed on application to Engr., accompanied by payment of \$5 for specifications and proposal forms and \$5 for plans.

Water and Sewer Systems.—City of Hartwell, Ga., McAlpin Thornton, Mayor.—Bids to construct water-works and sewer system; \$46,000 bonds available.

Water-works Equipment.—Board Public Works, Eastover, S. C.—Bids until Jan. 18 for following: Steel hemispherical-bottom water tank with plate roof and 6-in. brass expansion joint, capacity 25,000 gals.; 80-ft. steel tower with 24-in. metal balcony and metal ladder; 12 H. P. throttling governor kerosene engine, geared base, with deep-well working head; 400 ft. 8-in., 1820 ft. 6-in. and 150 ft. 4-in. class A cast-iron or Matheson lock-joint pipe; 2628 ft. 2-in. galvanized iron or Matheson lock-joint pipe; 2000 ft. 1-in. galvanized iron pipe; hydrants, gate valve and valve boxes, etc.; plans and specifications at office of E. N. Chisolm, Jr., Engr., Room 20, Clark Law Bldg., Columbia, S. C.; J. A. Byrd, H. G. Bates, S. W. McKensie and H. W. King.

Well-drilling Machines.—G. W. Parish, Littleton, N. C.—Well-drilling machine and engine; give description and prices.

Wheel and Axle Press.—American Metallic Packing Co., Lexington, Ky.—200-ton hydrostatic first-class used wheel and axle press; to take engine and car wheels as large as 59 in. in diam.; give best cash price.

Wire.—B. L. Umberger, Concord, N. C.—Prices on anchors or galvanized wire pieces for cement blocks.

Wool Waste.—See Felt or Wool Waste, etc.

Woodworking Machinery.—Frank B. Nihart, Arcade Bldg., Bay Minette, Ala.—Prices on machinery for manufacturing potato hampers, berry boxes, orange straps, etc.

Woodworking Machinery.—Jos. L. Pearson & Sons, Route 2, Keysville, Va.—Variety wood lathe for turning square or other shape balusters; second-hand or rebuilt. (See Lathe and Shears.)

Woodworking Machinery.—Dan River Lumber Co., T. J. Covington, Secy., Walnut Cove, N. C.—Prices on window and door frame machine and 4-sided planer.

Woodworking Machinery.—T. W. Minton & Son, Barboursville, Ky.—Prices on machinery for manufacture of dowel pins, insulation rods and other products from hickory mill waste.

Woolen Machinery.—W. L. Fordyce, Philippi, W. Va.—Machinery for blanket mill; 10-loom equipment.

Yarn (Mop).—Star Bottling Co., So. Fourth and Gayosa, Memphis, Tenn.—Prices on mop yarn.

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Mobile.—City Bank & Trust Co. will become the City National Bank, increasing capital stock from \$500,000 to \$750,000. Its surplus and undivided profits will be over \$375,000. It will continue to handle trust business. E. J. Buck is Pres.; Pat J. Lyons, V.-P., and A. C. Tonsmeire, Cash.

Ark., Argenta.—Argenta Real Estate & Insurance Co. chartered. Incorporators: J. W. Lippincott, Pres.; H. I. Bremyer, J. B. Brindley, James Gerlach and R. S. Roberts.

Fla., Ellerton.—First National Bank of Ellerton has begun business; capital \$15,000; E. W. Stapleton, Pres.; G. P. Fuller, V.-P.; L. D. Stapleton, Cash.

Ga., Cartersville.—Bartow County Mutual Fire & Storm Insurance Co. has applied for charter; incorporators, W. M. Dodd, J. W. Burns, E. F. Noland, G. A. Veach, W. J. Biddy, J. L. White, V. W. Hays, B. F. Martin, Hiram Hays and Chas. Maxwell.

Md., Baltimore.—United States Mortgage & Realty Corp., Munsey Bldg., Baltimore, has practically completed organization; authorized stock: common, \$1,000,000; preferred, \$9,000,000, in shares of \$10 each, all of which must be fully paid in cash. The corporation will own and improve agricultural and timber lands, also central business real estate in various cities, and underwrite securities. Chartered under the laws of Virginia. H. E. Black of Scranton, Pa., is Pres.; J. Henry Strohmeier of Baltimore, 1st V.-P.; Wm. M. Baker of Baltimore, Treas. These and the following form the board of directors: Ernest Roberts of Baltimore; John E. Lewis of Reading, Pa.; J. O. Kaderly of Baltimore, C. P. Roberts of Scranton, and S. C. Stoner of Westminster, Md. A secretary is yet to be elected.

Mo., St. Louis.—St. Louis Union Bank, with capital and surplus of \$5,000,000, is organized to transact business of the St. Louis Union Trust Co.; T. H. West, Chrmn. of Board; N. A. McMillan, Pres.; John F. Shepley, Henry C. Haarstick and Robert S. Brockings, V.-Ps.; P. V. Dobrouillet, Cash.; J. S. Walker, Byron W. Moser, L. E. Williams, G. M. Willing, Asst. Trust Officers; W. J. D. McCarter and J. E. Uhrig, Asst. Cashs.; A. H. L. Kuhn, Mgr. Savings Dept. (Previously mentioned in error under Little Rock, Ark.)

Okla., Oklahoma City.—Guffin Investment Co. chartered; capital \$25,000; incorporators, W. L. Guffin, Oklahoma City, and W. M. Tomlin, J. F. Warren, Purcell.

S. C., Charleston.—Seaboard Building and Loan Assn. is chartered; capital \$150,000; R. H. Rhett, Pres.; T. T. Hyde, Secy. and Treas.

S. C., Chester.—Citizens' National Bank of Chester, capital \$60,000, has made application to organize; directors, J. G. White, T. H. White, R. R. Hafner and S. E. McFadden. This will succeed the Citizens' Bank of Chester.

S. C., Holly Hill.—First National Bank of Holly Hill is approved; capital \$25,000; surplus \$20,000; W. L. DeHay, Pres.; Dr. J. L. B. Gilmore, V.-P.; J. Francis Folk, Cash.; J. W. Black, Asst. Cash.; W. S. Hart, Teller. This is a conversion of the Bank of Holly Hill.

S. C., Olanta.—Bank of Olanta has made application to convert into the First National Bank of Olanta; capital \$25,000.

S. C., Orangeburg.—People's National Bank chartered; capital \$100,000; surplus \$20,000; D. O. Herbert, Pres.; J. W. Culler, Cash. Business began Jan. 4. This is a conversion of the People's Bank.

S. C., Sumter.—National Bank of Sumter, a conversion of the Bank of Sumter, is chartered; capital \$200,000; surplus \$50,000; J. P. Booth, Pres.; R. F. Haynsworth, D. D. Moise, C. M. Hurst, V.-Ps.; Bernard Manning, Cash.; W. J. Crowson, Jr., Asst. Cash.

Tenn., Camden.—Benton County Bank and the First National Bank have consolidated under the name of the latter institution.

Tenn., Covington.—The Covington Savings Bank & Trust Co. is merged with the Union Savings Bank. Capital of latter institution is increased from \$30,000 to \$50,000. G. B. Gillespie is Pres.

Tenn., Memphis.—The Mercantile Bank is reported to have absorbed the Citizens' Bank & Trust Co.

Tenn., Nashville.—State Bank & Trust Co. and the Union Trust Co. have consolidated under the name of the former institution.

Tex., Bardwell.—First National Bank chartered; capital \$40,000; M. W. Wright, Pres.; C. W. Brown, Cash.

Tex., Bellville.—Austin County Abstract Co., capital \$10,000, is inceptd. by C. R. Johnson, W. A. Matthaef and J. H. Thompson.

Tex., Jasper.—Jasper County Abstract Co. inceptd.; capital \$5000; began business Jan. 1; incorporators, H. C. Howell, H. O. Howell and A. L. Mays.

W. Va., Shinnston.—People's Bank of Shinnston, capital \$45,000, is chartered; will begin business Jan. 15; Pres., George A.

Ferguson; V.-Ps., Lee Boggess and Benj. Anderson; Cash., Lawrence E. Hawkins. Other directors are Ralph S. Johnson, J. M. Riley, H. T. Kilginsmith, S. L. Vincent, George Brent, C. A. Short, Frank Abruzzo, A. W. Martin, B. H. Lucas, N. B. Cox and Geo. Wisser.

NEW SECURITIES

Ark., Rogers.—Feb. 18 election is to be held to vote on \$18,000 fire-department bonds. Address The Mayor.

Fla., Arcadia.—Bids will be received until noon Feb. 1 by James O. Bickley, Supt. of Public Instruction DeSoto County, for \$32,500 6 per cent. school bonds.

Fla., Arcadia.—No bids were received Jan. 5 for \$350,000 6 per cent. 30-year De Soto county road and bridge district No. 5 bonds, and new bids will be received until 2 P. M. Feb. 2. A. L. Durranne is Clerk Circuit Court.

Fla., Auburndale.—Bids will be received until 11 A. M. Jan. 29 for \$15,000 of 5 per cent. 20-year school bonds of Patterson Lake View Addition of Auburndale, Polk county. Address J. C. Owens, Chrmn., or C. A. Parker, Secy. Board of Public Instruction at Bartow, Fla.

Fla., Clearwater.—\$1500 Green Springs School Dist., Pinellas county, school bonds are voted. Dixie M. Hollis is Supt. Public Instruction.

Fla., DeLand.—Election is to be called in Volusia county to vote on \$350,000 road bonds. Address County Comms.

Fla., Fort Myers.—\$25,000 of 5 per cent. 20-year schoolhouse building bonds of Dist. No. 5, Lee county, have been sold at par to Sidney Spitzer & Co. of Toledo, O.

Fla., Eustis.—Feb. 2 election is to be held to vote on \$15,000 sanitary sewer and \$35,000 6 per cent. 10-30-year storm-sewer and street-paving bonds; denomination \$1000. I. N. Kennedy is Mayor and R. O. Riddle City Clerk.

Fla., Felismere.—Election is soon to be held to vote on \$25,000 school district building bonds. Address Board of Education.

Fla., High Springs.—\$6000 High Springs School Dist., Alachua county, school bonds are voted. Address Board of Education.

Fla., Jacksonville.—Petitions are to be circulated calling for an election to vote on \$1,000,000 school bonds. F. A. Hathaway is Supt. Board of Public Instruction.

Fla., Jacksonville.—\$150,000 5 per cent. 29-year armory bonds have been purchased at \$2517 premium by R. M. Grant & Co., New York, represented by Atlantic National Bank, Jacksonville.

Fla., Millville.—Town proposes to issue \$25,000 school bonds. Address Board of Education.

Fla., Nocatee (P. O. Arcadia).—Bids will be received until noon Feb. 1 by Jas. O. Bickley, Supt. Board of Public Instruction, DeSoto county, for \$15,000 6 per cent. 30-year bonds Nocatee special school Dist. No. 4, DeSoto county, dated July 1, 1914. Also for \$17,500 6 per cent. 30-year bonds Sebring special school Dist. No. 37.

Fla., Seabreeze.—The \$15,000 30-year water-works bonds voted Dec. 20 are 6 per cent, 30-year; denomination \$100. A. T. Bigelow is Mayor.

Fla., Tampa.—Hillsborough county school district bonds were sold as follows: \$60,000 5 per cent. special tax school district No. 4 (West Tampa Dist.), to Duke M. Farson & Co., Chicago, at \$7,880; \$5000 special tax school district No. 31 (Wimauma Dist.), to Cutter, May & Co., Cincinnati, at \$4850. No bids were received for the \$3000 Seffner Dist. \$2000 Lake Fern Dist. and the \$1500 Cork Academy Dist. Marshall Moore is Secy. Board of Public Instruction, Hillsborough county.

Fla., West Palm Beach.—\$100,000 of 5 1/2 per cent. 30-year street, sewer and riparian improvement bonds, dated Jan. 1, denomination \$500, have been sold to John Nuveen & Co. of Chicago at par and interest, less \$3000 for printing bonds, attorney's fees, etc.

Ga., Buchanan.—Bids are being received by M. Bullard, Chrmn. School Board, Buchanan School Dist., for \$15,000 5 per cent. school bonds; denomination \$1000; dated Jan. 1, 1915; maturity 1926 to 1940.

Ga., Hartwell.—The \$33,000 water and \$11,000 sewer 5 per cent. 20-year bonds have been purchased by J. B. McCrary Co., Atlanta, Ga.

Ga., Gay.—\$10,000 6 per cent. 20-year school district building bonds are reported purchased by Robinson-Humphrey-Wardlaw Co., Atlanta.

[For Additional Financial News, See Page 62.]

Merchants-Mechanics National Bank

South and Water Sts. BALTIMORE, MD.
DOUGLAS H. THOMAS, President
JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
JOHN B. H. DUNN, Cashier
 Capital \$2,000,000 Deposits \$21,670,000
 Surplus and Profits \$2,175,000
 Accounts of Banks, Bankers, Corporations and Individuals solicited.
 We invite correspondence.

Edwin Warfield, President

Fidelity and Deposit Company of Maryland

Home Office: Baltimore

Total Assets over \$11,000,000.00

All Kinds and Classes of Surety Bonds and Casualty Insurance

Largest and Strongest Surety and Casualty Company in the World

The National Exchange Bank

OF BALTIMORE, MD.
 Hopkins Place, German and Liberty Streets
 Capital, \$1,000,000
 August 9th, 1913, Surplus and Profits, \$764,091.00
OFFICERS
WALDO NEWCOMER, President
SUMMERFIELD BALDWIN, Vice-Pres.
R. VINTON LANSDALE, Cashier
C. G. MORGAN, Asst. Cashier
 Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

GO SOUTH!

FOR SALE Timber, Coal, Iron, Ranch and Other Properties
 Southern States, West Indies, Mexico
GEO. B. EDWARDS, (Broker)
 Tribune Building NEW YORK, N. Y.
 Confidential Negotiations, Investigations, Settlements, Purchases of Property

We Buy Bonds

City, County, School and Road, from Municipalities and Contractors
WRITE
THE PROVIDENT SAVINGS BANK & TRUST CO.
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5000—\$9.75

U. S. BANK BOND LETTERHEADS
 Attractively printed, boxed, shipped prepaid any point east of Mississippi. Envelopes to match at same price. Send postal for samples.
SOUTHWEST VIRGINIA ENTERPRISE
 Wytheville, Virginia

WATCHMAN'S CLOCKS

Approved by all Insurance Companies
WILL POSITIVELY KEEP YOUR NIGHT WATCHMAN AWAKE
 FULL INFORMATION
Watchman's Clock & Supply Co.
C. A. NANZ 9 Church Street NEW YORK

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MANUFACTURERS OF

SAFES and VAULTS

YORK, PA.

BALTIMORE, MD.

Lowell Crayons Still in the Lead

Although cotton, woolen and worsted mills are more and more exacting, the Lowell Crayon still pleases them; it's still in the lead.

LOWELL CRAYON CO.,
 Original Makers

LOWELL, MASS.
 Trade Mark on Every Box.

The First National Bank

17 South St., Baltimore, Md.
 Capital, - - - \$1,000,000
 Surplus and Net Profits, 450,000
 Deposits, - - - 8,500,000
 Especially well equipped to handle the business of Southern Banks, Corporations, Individuals and Manufacturers. We cordially invite correspondence and interviews.

Delaware Trust Company

Wilmington, Delaware
 INCORPORATING under broad, liberal, safe and stable Delaware laws. A fully equipped department for proper organization and registration of corporations. **BANKING AND TRUST** department gives special attention to out of town customers' accounts. **TITLE DEPARTMENT** examines and guarantees title to realty throughout Delaware. **REALTY DEPARTMENT** has sites for manufacturing industries. Modern Methods of management of property.

J. ERNEST SMITH, President and Gen. Counsel.
WM. G. TAYLOR, Vice-Pres. and Treasurer.
HARRY W. DAVIS, Vice-Pres. and Secretary
W. W. PUSEY, 2nd, Title and Real Estate Officer

The First National Bank

OF KEY WEST, FLA.
 United States Depository and Disbursing Agent
 Capital and Undivided Profits - - - \$100,000
 Surplus and Undivided Profits - - - 40,000
 A general banking business transacted
 Special attention given to collections

JOHN NUVEEN & CO.

First National Bank Building
 CHICAGO
 We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Speciality.
 Write us if you have bonds for sale.

FIRST NATIONAL BANK

RICHMOND, VIRGINIA
 Capital and Surplus, - - - \$3,000,000
JNO. B. PURCELL, President
JNO. M. MILLER, Jr., Vice-Pres.
W. M. ADDISON, Cashier

If you wish to keep posted on the progress of the South read the

MANUFACTURERS RECORD

Price \$4.00 a year, or six months for \$2.00

Municipal Bonds Purchased

Correspondence invited from investors wishing to sell their holdings of seasoned marketable Municipal Bonds, and from municipal officials and contractors in connection with entire new issues.

N. W. HALSEY & CO.

49 Wall Street, New York

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CHICAGO

SAN FRANCISCO

CHARLES L. HEHL, C. P. A., President **JOHN KUCHLER, C. P. A., Vice-President**
ERNEST E. WOODEN, C. P. A., Sec. and Treas.

BALTIMORE AUDIT COMPANY

901-903 Calvert Building

BALTIMORE, MD.

We Buy City, County School and Drainage BONDS

FROM MUNICIPALITIES OR CONTRACTORS
 We are in position to pay HIGHEST PRICES. Write or wire us your offerings.
THE NEW FIRST NATIONAL BANK Assets, \$8,000,000 COLUMBUS, O.

BALTIMORE OFFICE SUPPLY CO., Inc.

641 COLUMBIA AVE., BALTIMORE, MD.
 Manufacturers of
Steel Die Embossed Stationery
 Write for Samples and Prices.

A FORTUNE TO THE INVENTOR

who reads and reads it, is the possible worth of the book we send for 6c. postage.
 Write us at once.
R. S. & A. B. LACEY Dept. 5 Washington, D. C.

To Manufacturers and Capitalists

Contemplating the Establishment of Industrial Enterprises

Attention is called to the exceptionally favorable location of

NEWPORT NEWS, VA.

on Hampton Roads, fifteen miles from the sea. Deep water, railway and sea transportation facilities unrivaled. Climate salubrious. Apply to

W. B. LIVEZEY, President

OLD DOMINION LAND COMPANY
 NEWPORT NEWS, VA.

Capital for Southern Industries**Peabody, Houghteling & Co.**

(Established 1865)

10 So. La Salle Street

CHICAGO, ILLINOIS

Temporary Financing of States, Cities and Counties Pending Issuance of Bonds

ALSO ENTIRE ISSUES OF BONDS PURCHASED

Largest Capital and Surplus of Any Financial Institution in Maryland or Any Southern State

Established 1864

Resources Sixteen Millions

MERCANTILE TRUST AND DEPOSIT COMPANY OF BALTIMORE

A. H. S. POST, President

F. G. BOYCE, Jr., Vice-President

Ga., Lincoln.—\$30,000 5 per cent. 20-year Lincoln county courthouse bonds have been purchased by J. H. Hillsman & Co., Atlanta, at 97 net.

Ga., Macon.—Election is to be held Feb. 9 to vote on \$150,000 hospital, \$120,000 street and \$30,000 sewer 4½ per cent. 30-year bonds. Bridges Smith is Mayor.

Ga., Savannah.—Bids will be received until noon Feb. 6 for \$200,000 auditorium bonds. R. J. Davant is Mayor.

Ga., Preston.—\$15,000 6 per cent. Webster county courthouse bonds were recently purchased at a premium by Bank of Commerce of Americus.

Ga., Wadley.—\$6400 5½ per cent. 10-year electric-light bonds recently voted have been purchased by Singleton-Smith Co., Macon.

Ky., Lancaster.—Garrard county has voted \$15,000 courthouse improvement bonds. Address County Comms.

La., Plaquemine.—\$42,000 water and sewer bonds have been awarded to Bash Janes, Joplin, Mo., at par and accrued interest.

Ky., Seabree.—No bids were received Jan. 4 for the \$14,000 4½ per cent. water-works bonds. C. H. Ramsay is Mayor.

Ky., Tompkinsville.—\$5000 Tompkinsville School Dist. bonds have been sold. Address Board of Education.

La., Alexandria.—Bids will be received until noon Jan. 27 by D. B. Showalter, Supt. Parish School Board, for \$15,000 5 per cent. 1-20-year building bonds School Dist. No. 23, Rapides parish. Also for \$25,000 5 per cent. 1-11-year bonds School Dist. No. 27.

La., Covington.—\$100,000 5 per cent. St. Tammany parish bonds have been purchased by Devitt, Tremble & Co., Chicago; dated July 1, 1914; maturity, 1915 to 1940.

La., Crowley.—Election will be held at Estherwood Feb. 2 on \$38,000 Series A and \$10,000 Series B 5 per cent. 32-year bonds of Fifth Ward Drainage Dist. No. 1 of Acadia parish; denomination \$500. Ellis Hoffpauir is Pres. Drainage Comms.

La., Edenborn Station, Gonzales.—Bids will be received until noon Feb. 4 by C. C. Weber, Secy. Board of Comms. New River Drainage Dist., Ascension parish, for \$175,000 5 per cent. 38-year bonds.

Mo., Chestertown.—\$54,000 5 per cent. Kent county school bonds have been purchased at \$56,061.04 by Baker, Watts & Co., Nelson, Cook & Co. and Townsend Scott & Co. of Baltimore.

Mo., Cumberland.—\$150,000 4½ per cent. street-paving bonds were purchased at 99.41 by Alexander Brown & Sons, Baltimore.

Miss., Greenville.—\$100,000 30-year 5 per cent. refunding railroad bonds have been sold at a premium of \$1131 to the Wm. R. Compton & Co., St. Louis. W. W. Miller is Clerk Board of Supervisors Washington County.

Miss., Hickory.—Bids will be received by the Mayor and Board of Aldermen until noon Feb. 2 for \$10,000 Hickory Dist. school bonds. M. G. Scarborough is Clerk. Further particulars will be found in the advertising columns.

Miss., Meridian.—The sale of \$50,000 Dist. No. 1, Lauderdale county, road bonds is postponed from Jan. 6 until some time in February. W. R. Pistole is Clerk Chancery Court.

Miss., Senatobia.—\$20,000 6 per cent. 5-25-year Tate County Agricultural High School \$500 bonds were purchased Jan. 4 by Elston, Clifford & Co., Chicago, at \$20.564; dated Jan. 1, 1915; J. A. Wooten is Chancery Clerk.

Mo., Bigelow.—Bigelow School Dist., Holt county, has voted school-building bonds. Address Board of Education.

Mo., Caruthersville.—Election is called for Jan. 26 on \$32,000 of sewer and \$30,000 of water-works-extension bonds. Address The Mayor.

Mo., Marysville.—Bids will be received until 10 A. M. Feb. 1 by Fred J. Yeomans, County Clerk, for \$25,000 Lincoln township, Nodaway county, road bonds; denomination \$500.

N. C., Charlotte.—\$3000 of street assessment bonds have been purchased by Leech & Co., New York.

N. C., Hendersonville.—\$20,000 6 per cent. 30-year road bonds Mills River township, Henderson county, have been purchased by C. N. Malone & Co., Asheville. Crab Creek township, also in Henderson county, has \$15,000 road bonds to sell. Address County Comms.

N. C., Marshall.—Bids will be received until noon Jan. 18 by Board of Comms. Madison County for \$150,000 5 per cent. 30-year Madison county road-improvement bonds. Address Board of County Comms., W. L. George, Chrmn.

N. C., Salisbury.—\$23,000 6 per cent. bonds Black Creek Drainage Dist., Rowan county, have been purchased at par by the Wachovia

Bank & Trust Co., Salisbury; denomination \$500; dated Jan. 1, 1915; maturity Jan. 1, 1918 to 1927, inclusive.

N. C., Shelby.—The last \$25,000 of the \$100,000 5 per cent. Township No. 6 good-roads bonds have been purchased at par by the First National Bank, Shelby.

N. C., Yadkinville.—Steps are being taken in Yadkin county to call an election to vote on \$200,000 road bonds. Address County Comms.

Okla., Afton.—Jan. 21 election is to be held to vote on \$37,000 sewer bonds. Address Board of Trustees.

Okla., Dustin.—Election will be held in near future to vote on \$6000 water-works improvement bonds. Address The Mayor.

Okla., Enid.—Jan. 14 election is to be held to vote on \$50,000 water-works extension bonds. Address The Mayor.

Okla., Guthrie.—Election is to be held Jan. 14 to vote on \$50,000 water-works-extension bonds. Address Mayor Nissley.

Okla., New Cordell.—Bids will be received until 7.30 P. M. Jan. 18 for \$75,000 6 per cent. 10-25-year water-works extension bonds. J. Reid is City Clerk. Further particulars will be found in the advertising columns.

Okla., Pond Creek.—City is offering for sale \$7000 6 per cent. 20-year water and light system bonds. Address The Mayor.

Okla., Red Rock.—Election is to be held Jan. 28 to vote on \$22,000 water-works bonds. Address The Mayor.

Okla., Talihina.—\$20,000 Talihina township, LeFlore county, road bonds are reported sold. Address County Comms.

Okla., Tulsa.—Bids will be opened Jan. 22 for \$500,000 5 per cent. 20-year \$1000 school bonds; dated Apr. 1, 1914; maturity Feb. 31, 1934. Ray S. Fellows is Clerk Board of Education.

Tenn., Blountville.—Sullivan county proposes to issue \$100,000 of bonds for completing system of highways. Address County Court.

Tenn., Camden.—\$40,000 Benton county warrants for erection of new courthouse are to be issued. Address County Comms.

Tenn., Chattanooga.—County Court is to be petitioned to raise school bond issue passed at last Legislature from \$200,000 to \$225,000. If resolution passes, Legislature will be requested to raise interest rate from 4 to 5 per cent. Address Hamilton County School Board.

Tenn., Chattanooga.—A resolution will be adopted by the County Court of Hamilton County asking the Legislature to authorize county to increase rate of interest from 4½ to 5 per cent. on \$200,000 school bonds voted last August.

Tenn., Jacksboro.—\$150,000 Campbell county road bonds are voted and will be placed on sale at once. Address County Comms.

Tenn., Knoxville.—Mch. 6 election is to be held in Knox county to vote on road bonds. Address County Comms.

Tenn., Knoxville.—Knox County Court will petition Legislature for authority to issue \$125,000 of bonds to assist in purchase of Cherokee property for University of Tennessee. Address County Comms.

Tenn., Maryville.—Election is to be held in Blount county to vote on \$300,000 pike bonds. Address County Comms.

Tex., Anderson.—\$30,000 Dist. No. 3, Grimes county, road bonds voted; \$60,000 Dist. No. 4, Grimes county, road bonds defeated. Reid Rikard, County Judge.

Tex., Austin.—A movement has been started for an issue of \$150,000 of bonds by Travis county for a county hospital, and a petition for election is being circulated. County Comms. may give information.

Tex., Austin.—The Attorney-General has approved the following securities: \$7500 Pearsall school bonds.

Tex., Corpus Christi.—\$165,000 Nueces county causeway construction bonds are reported sold. Address County Comms.

Tex., Corpus Christi.—The election to vote on \$100,000 paving bonds will be held Feb. 5. Address The Mayor.

Tex., Houston.—An ordinance has been introduced in the City Council providing for the issuing of \$500,000 drainage, \$500,000 sanitary sewer, \$500,000 for erection of temporary wharf on the ship channel, \$250,000 for park improvement and \$300,000 of school bonds. Ben Campbell is Mayor.

Tex., Livingston.—\$25,000 of water-plant bonds are reported sold for \$23,360 net.

Tex., Magnolia Park, P. O. Houston.—Bids will be received until 11 A. M. Feb. 3 for \$134,000 5 per cent. 10-40-year water-works and street-improvement bonds. Address W. H. Farrington, Secy. of town.

Tex., Paris.—Election will soon be held to vote on \$100,000 Cooper Precinct, Lamar county, road bonds. Address County Comms.

Tex., Sinton.—\$50,000 bridge-approach construction, Improvement Dist. No. 1, San Pa-

tricio county, bonds are voted. Address County Comms.

Tex., Temple.—Steps are being taken to secure a bond issue of \$400,000 for fire-fighting equipment. Address The Mayor.

Va., Bristol.—\$70,000 5 per cent. public-improvement bonds have been sold at about par to Baker, Watts & Co., Baltimore.

Va., Roanoke.—Election is to be called to vote on \$100,000 school bonds. Address The Mayor.

W. Va., Parkersburg.—Board of Education has voted a resolution to recall the \$300,000 4 per cent. bond issue voted some time ago and submit to the voters on Feb. 11 an issue of \$250,000 5 per cent. bonds. C. E. Vandevender is Pres. of Board.

W. Va., Shadyside, P. O. Wheeling.—Election will soon be held to vote on \$45,000 water-plant bonds. Address The Mayor.

INDUSTRIES AT BRUNSWICK.

Methods for Encouraging Support of Home Manufacturing.

Board of Trade,
Brunswick, Ga., January 7.

Editor Manufacturers Record:

Replying to your recent letter inquiring what our organization is doing in the way of exhibits of home-made goods to encourage local support of industries in our community, I advise that we have accumulated an extensive exhibit of agricultural products, which products, encased in uniform style of glass jars, attractively arranged in the office, including everything which is grown profitably in this vicinity.

Among the products exhibited are grapefruit, pecans, peaches, pears, grapes, strawberries, figs, corn, okra, beans, garden huckleberries, oats, tomatoes, pomegranates and many other agricultural products.

We are gradually accumulating an exhibit of our manufactured products, including boxes and fruit packages, canned oysters, canned prawn, rosin, pine oil and other naval stores products, brooms, bottled soft drinks, blank books, etc. Manufactured products which are too large for ordinary exhibit purposes we are having made in miniature scale, that can be attractively exhibited. Our leading idea in gathering this exhibit is to educate our own people to a firm faith in their community.

We find the exhibit to be of great value for this purpose, and also to be invaluable

in interesting prospective investors who come to the office for information.

It may not be amiss in this communication to outline to you the general development and condition of this section of the South. The Brunswick Creosoting Co. has about completed its \$100,000 plant, which will be the most modern creosoting plant in the country. The construction work is concrete and steel throughout, and is so designed to deliver its finished product on board the cars or ship board at a minimum cost. The capacity of this plant will be 50,000,000 board feet of lumber or the equivalent thereof per year. The importance of Brunswick as a tie and timber market and port of export will be a powerful factor in guaranteeing the permanence and prosperity of the Brunswick Creosoting Co.

Three large plants for the canning of prawn have been completed in Brunswick, and have been in operation this winter. This is a great new industry for the Georgia coast which has been developed this year for the first time, and will be the means ultimately of adding great wealth to the State of Georgia. Lumber and crossies are beginning to move, as a direct result of the 5 per cent. rate increase granted the railroads of official classification territory. Naval stores conditions were rapidly improving up to the time of the action of the British Government in placing naval stores and resinous products on the list of absolute contraband of war. This great industry, which has undergone many serious setbacks and trials during the past 18 months, will, of course, recover from this latest misfortune, but for the present the action of Great Britain has had a depressing effect.

General conditions in this section seem to be slowly approaching normal, with indications of fair business conditions for next summer and fall.

J. G. WEATHERLY, Secretary.

Magic and Magicians.

Dr. Henry R. Evans of Washington, D. C., and Harry Houdini, whose astonishing ability to escape from any bonds placed either upon or around him, is well known to theatergoers, are collaborating on a literary work dealing with the history of

St. Louis & San Francisco Railroad

4% REFUNDING MORTGAGE BONDS OF 1951

To Holders of the Above Named Bonds and the Certificates of Deposit in Respect Thereof.

NOTICE IS GIVEN AS FOLLOWS:

1. 87½% in amount of the outstanding bonds have been deposited;
2. The Committee is advised that default will again be made by the Receivers now in the payment of the interest due January 1, 1915, on the outstanding bonds. The Committee has, therefore, arranged, in accordance with the provisions in that respect contained in the Deposit Agreement, (a) to purchase the coupons and claims for registered bond interest due January 1, 1915, appertaining to deposited bonds, and (b) to purchase the coupons and claims for registered bond interest due July 1, 1914, not heretofore purchased by the Committee, appertaining to deposited bonds.

Central Trust Company of New York, and Mississippi Valley Trust Company, St. Louis, on behalf of said Trust Company, will accordingly be prepared to pay depositors for their coupons upon the presentation of certificates of deposit for appropriate stamping and upon the filing by depositors of properly executed certificates in the form required by the United States Income Tax Law and the regulations of the Internal Revenue Department. The Committee may at any time and without further notice cease its purchase of the coupons and claims of interest above mentioned.

In view of its determination to purchase the coupons and claims for interest above mentioned the Committee will continue for the present to receive additional deposits, but reserves the right at any time, without further notice, to refuse to accept further deposits.

Copies of the Deposit Agreement may be obtained from the Depositaries or from the Members or Secretary of the Committee. For further information application may be made to the Chairman or Secretary of the Committee.

Dated New York, December 31, 1914.

FREDERICK STRAUSS, Chairman;
JAMES N. WALLACE,
ALEXANDER J. HEMPHILL,
EDWIN G. MERRILL,
HARRY BRONNER,
CHARLES W. COX,
BRECKINRIDGE JONES,
Committee.

JOLINE, LARKIN & RATHBONE, Counsel.
CHARLES E. SIGLER, Secretary,
54 Wall Street, New York City.

magic and magicians from the earliest times to the present day. It will contain a fund of entertaining and instructive material about the lives and adventures of famous necromancers, and will be illustrated with old prints, portraits, play bills, programs, etc. Mr. Houdini has a won-

derful store of such things, some of the choicest of which will be reproduced in the volume, and the manuscript has already attained ponderous proportions. The work will constitute a valuable and important addition to the literature of the stage.

German Savings Bank

ANNUAL REPORT OF THE CONDITION OF THE GERMAN SAVINGS BANK OF BALTIMORE CITY, OF BALTIMORE, IN THE STATE OF MARYLAND, at the close of business, December 31st, 1914, in conformity with Section 36 of the Banking Law.

Funds on hand December 31st, 1913.....	\$4,772,700.65
Received from depositors during 1914.....	2,190,952.50
Received interest and dividends on stocks, bonds, loans, etc., during 1914.....	233,795.08
Total.....	\$7,197,508.23
Paid depositors during 1914, including interest.....	\$2,253,852.50
Paid expenses during 1914.....	20,963.00
Paid taxes during 1914.....	13,386.51
Paid premiums, etc., during 1914.....	11,834.34
Ledger cost of bonds reduced during 1914.....	12,120.00
Funds on hand December 31st, 1914.....	4,885,351.88
Total.....	\$7,197,508.23

ASSETS. (Book Value.)

Bonds and stocks owned.....	\$3,453,905.26
Loans on collateral.....	258,270.00
Loans on mortgages.....	919,183.46
Real Estate (Bank Building).....	25,000.00
Other Real Estate owned and Ground Rents.....	51,054.16
Miscellaneous assets, Perpetual Insurance Fund.....	1,500.00
Cash on hand and in Banks and Trust Companies.....	176,439.00
Total.....	\$4,885,351.88

LIABILITIES

Due depositors, including interest credited January 1, 1915.....	\$4,633,316.78
Guarantee Fund.....	252,035.10
Undivided Surplus.....	252,035.10
Total.....	\$4,885,351.88

Accounts open December 31st, 1913.....	8,206
Accounts opened during 1914.....	1,065
Accounts closed during 1914.....	1,123
Accounts existing December 31st, 1914.....	8,148

CHARLES SPILMAN, *President*.
WILLIAM SPILMAN, *Treasurer*.

The undersigned, appointed by the BOARD OF DIRECTORS OF THE GERMAN SAVINGS BANK OF BALTIMORE CITY, have audited the above statement and find the same correct.

CHARLES ZIES,
HARRY M. BENZINGER,
THEO. F. KRUG.

CONDENSED REPORT TO COMPTROLLER

The First National Bank

OF BIRMINGHAM, ALA.

ALABAMA'S FIRST MILLION-DOLLAR BANK

THURSDAY, DECEMBER 31, 1914.

RESOURCES

Loans and Discounts.....	\$9,744,142.52
Overdrafts.....	350.52
U. S. Bonds (Par).....	1,500,000.00
State of Alabama Bonds.....	383,500.00
Other Stocks and Bonds.....	803,167.50
Banking House.....	365,500.00

CASH

In Vault.....	\$ 847,198.33
With Banks.....	1,984,795.28
With U. S. Treasurer.....	144,750.00
With Federal Res. Bank.....	245,000.00

\$ 3,221,743.61

\$16,018,404.15

LIABILITIES

Capital Stock.....	\$ 1,500,000.00
Surplus and Profits.....	1,657,498.08
Circulation.....	2,268,050.00
Dividends Unpaid.....	45,000.00
Bond Account.....	97,000.00

DEPOSITS

Individual.....	\$ 8,963,580.75
Bank.....	1,112,280.32
United States.....	375,000.00

\$10,450,861.07

\$16,018,404.15

OFFICERS

J. H. BARR, *President*

J. H. WOODWARD, *Vice-President*

THOMAS HOPKINS, *Cashier*

THOMAS BOWRON, *Asst. Cashier*

J. E. OZBURN, *Secretary Savings Department*

J. L. CROSS, *Auditor*

F. S. FOSTER, *Asst. Cashier*

J. K. FLEMING, *Asst. Cashier*

PARTICULAR ATTENTION GIVEN TO COLLECTIONS
DIRECT CONNECTIONS AT ALL ALABAMA POINTS

THE SAVINGS BANK OF BALTIMORE

ANNUAL REPORT

OF THE CONDITION OF THE

Savings Bank of Baltimore OF BALTIMORE

IN THE STATE OF MARYLAND, at the close of business, December 31st, 1914, in conformity with Section 36 of the Banking Law.

Funds on hand December 31st, 1913.....	\$36,408,438.68
Received from Depositors during 1914.....	7,577,673.31
Received interest and dividends on stocks, bonds, loans, etc., during 1914.....	1,763,888.40
Total.....	\$45,750,000.39

Paid Depositors during 1914, including interest.....	\$8,298,147.05
Paid expenses during 1914.....	73,296.28
Paid taxes during 1914.....	100,367.90
Paid premiums, etc., during 1914.....	41,663.23
Ledger cost of bonds reduced during 1914.....	323,791.25
Funds on hand December 31st, 1914.....	36,912,734.68
Total.....	\$45,750,000.39

ASSETS

(Book Value.)

Bonds and stocks owned.....	\$32,909,245.11
Loans on mortgages.....	2,802,668.00
Real Estate (Bank Building).....	300,000.00
Other Real Estate owned.....	74,581.96
Cash on hand and in banks.....	826,239.61
Total.....	\$36,912,734.68

LIABILITIES

Due Depositors.....	\$34,317,640.57
Guarantee Fund.....	1,900,000.00
Undivided Surplus (chargeable with Nine months' accrued interest on deposits payable April 1st, 1915).....	695,094.11
Total.....	\$36,912,734.68

Accounts open December 31st, 1913.....	54,364
Accounts opened during 1914.....	6,010
Accounts closed during 1914.....	6,377
Accounts existing December 31st, 1914.....	53,997

W. H. CONKLING, *President*.

F. A. HOFFMAN, *Treasurer*.

The undersigned, appointed by the BOARD OF DIRECTORS OF THE SAVINGS BANK OF BALTIMORE to audit its Statement for the past year and to report thereon, have carefully performed the duty assigned to them and find the same to be correct.

H. A. ORRICK,
JOHN D. HOWARD,
FRANKLIN P. CATOR.

Classified Opportunities

MEN WANTED

IF QUALIFIED for executive, technical, mechanical, professional or administrative position carrying salary between \$2500 and \$12,000, write undersigned counsel, through whom strictly confidential preliminaries will be negotiated for important appointments. Send address only for prefatory details. R. W. Bixby, Lock Box 134-J4, Buffalo.

EXPERT METAL WORKER wanted to take charge of tank department of prosperous corporation with bright future; prefer that he take small financial interest in the business. Good salary and dividends assured. No. 1682, care Manufacturers Record, Balto., Md.

SALESMEN acquainted with large mill and factory owners, to sell high-grade line of paints; commission basis; leads furnished; exclusive agency to right parties. Address No. 1681, care Manufacturers Record, Balto., Md.

WANTED—Experienced manager who will buy \$10,000 stock in woodworking company which has about \$60,000 invested; new, modern, well-equipped plant with good business. Address J. C. Braswell, President Rocky Mount Sash & Blind Co., Rocky Mount, N. C.

PARTNER WANTED

WANTED—Managing partner. Owner of new and completely equipped manufacturing plant, consisting of machine shop, foundry and wood-working plant, wants practical man for partner with \$5000 or more. Plant and machinery new, up to date, never used, on Southern Railway, 60 miles from Washington, D. C. Well adapted to manufacture of farm implements, spraying machinery or automobile parts. Owner will put in plant and dollar for dollar working capital with practical, responsible partner. For particulars address Edward S. Wilder, Charlottesville, Va.

AGENCIES WANTED

MANUFACTURERS wishing to place their goods in Texas through salesmen covering State may submit propositions to us with all details for consideration. W. Y. Rockwell & Company, Manufacturers' Agents, Suite 712 Wilson Building, Dallas, Texas.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

WE WANT to get in touch with manufacturers of agents' specialties for mail-order business. W. Y. Rockwell & Company, 712 Wilson Building, Dallas, Texas.

MANUFACTURERS' AGENT wants to represent good live concern in Western New York; first-class references. Address P. O. Box 867, Buffalo, N. Y.

SITUATIONS WANTED

KAOLIN AND CHINA CLAY MANAGER, 20 years' experience, wishes position; familiar, and competent to develop mine and prepare this commodity at lowest cost; best of references. Address No. 1663, care Manufacturers Record, Balto., Md.

FIRST-CLASS MAN, 15 years' experience in general contracting, capable of handling estimates and outside work, desires responsible position with contractor or architect. No. 1680, care Manufacturers Record, Balto., Md.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

OFFICE DEVICES

FOR SALE—New and second-hand office machinery and labor-saving devices of all kinds and makes. We offer some exceptional bargains at present. Collins & Company, 1324 Arch Street, Philadelphia, Pa.

MANTLE AND TILE FLOORS

NORTHCROSS WOOD MANTELS AND TILE FLOORS for every purpose. Sold direct from factory to your home. Best material and careful workmanship guaranteed. All orders receive prompt attention. Every contractor should have a copy of our new catalog showing the largest line in America. Mailed free. W. J. Northcross Mantel Company, 65 South Second Street, Memphis, Tennessee.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 15c. per line; 500 lines or more, 15c. per line.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

BUSINESS OPPORTUNITIES

PRACTICAL MINING MAN desires to invest services and some cash with someone having a small coal proposition; several years' experience as mine foreman, mine superintendent, and mining engineering. No. 1676, care Manufacturers Record, Balto., Md.

WANTED—Party to invest \$5000 and take active part in new cotton mill. Address Box 485, Easton, Md.

FOR SALE—Water and light plant in growing town of 3000 in Southwest Ala.; will also consider selling ice plant in connection with water and light plant. Best of reasons for selling. For particulars apply to E. P. Kimbrough, Greensboro, Ala.

\$500 WILL START YOU IN BUSINESS with \$1000 worth of stock, bringing \$75 to \$100 clear profit weekly. Exclusive territory. Patent adjustable form units for all kinds of concrete work. Our \$150 culvert outfit makes 150 different sizes and shapes of forms, while ten of these sizes in another make cost \$37.13. Is it any wonder ours sell? Act quick before your territory is taken. Frick Manufacturing Co., Fricks, Pa.

FOR SALE OR LEASE—A concrete warehouse containing 3 rooms with a floor space of 6000 sq. ft., or 72,000 cu. ft. capacity; has a spur track on one side and wagon drive on the other.

Also on the same tract of land a concrete hotel of 14 rooms. This property is in Austell, Ga., the source of Bowden and Beuscott Lithia Waters, on the Southern Railway, 18 miles west of Atlanta, at the junction of the Birmingham and Chattanooga Divisions. A fine chance for a man with push to make a good, easy living. Inquire of John W. Ash, 528 Temple Court, Chattanooga, Tenn.

WANTED—Acreage, farm, city or town property, suitable for subdivision into small farms or lots. Land brings more when cut up and handled by our up-to-date methods. We are fully equipped to subdivide and sell real estate at auction on commission in all parts of the United States. We turn real estate, residence lots or farms into cash quickly. We are also in position to negotiate exchanges of Washington city investment properties for farm, timber or residence property anywhere in the United States. Write us. Our representative will inspect your property. National Real Estate and Auction Company, 1024 Woodward Building, Washington, D. C.

WE ARE CONSULTING ENGINEERS backed by a competent staff and a modern machine plant that can save you money if you are interested in designing or building special machinery, special tools, experimental work, models, etc. If you have patented an article which is not perfected, a consultation with our expert mechanician is at your command. We are giving attention to developing patents and marketing patented articles, especially labor-saving appliances. Our list of office appliances is available. We invite correspondence and will give estimates promptly and cheerfully. Specialty Manufacturing-Sales Corp., Norfolk, Va.

HOTEL FOR SALE OR LEASE

FOR SALE OR LEASE—New 20-room hotel at Seminole Beach, a summer and winter resort; modern fixtures; a chance to make money for live party. For particulars see M. E. Sparrow, 1411 Morgan St., Tampa, Fla.

FACTORY SITES

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candler, President The Cohn-Cohn Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

INDUSTRIES WANTED

MISCELLANEOUS

CANNING FACTORIES, Creameries, Box and Fruit Package Factories and numerous other industries wanted along the Kansas City Southern Ry. Write Wm. Nicholson, Industrial Agt., 447 K. C. S. Bldg., Kansas City, Mo., for information regarding openings.

INDUSTRIAL PLANTS FOR SALE

IRON AND WIRE WORKS

FOR SALE—Established ornamental-iron and wire works in city of 120,000 inhabitants, doing \$10,000 business yearly; no opposition; reasons for selling; retiring. Quick action desired. San Antonio Wire and Iron Works, San Antonio, Tex.

MISCELLANEOUS

FOR SALE—A complete brick plant in good condition with capacity of 20,000 brick per day.

1 short log sawmill.
1 25-bbl. flour mill in brick building.
1 75-bu. corn mill in brick building.
1 corn and cob crusher.
The Flour Mill is kept going practically the year round. Price \$10,000, \$4000 cash, balance in three equal annual installments. Address Central Realty Co., Richmond, Va.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

FOR SALE—10,500 acres fine agricultural, stock, timber and coal land; well watered; practically level; railroad through property; must sell quick to wind up an estate. A fortune here for someone. Write A. E. Carter, Knoxville, Tenn.

INDUSTRIAL LANDS IN SOUTHERN STATES.—Coal, timber, iron, oil and gas lease; 25,000 acres coal Winston county, Ala., extra grade, two and three seams, \$10. Industrial Real Estate Company of the South, Wood, Ala., and elsewhere.

FOR SALE—Dividend-paying orange, grapefruit and pineapple groves, high-class town lots, town and river-front modern residences, stock farms, colonization tracts. Price \$3, \$5.50, \$5.50, \$6, \$10 and \$20 per acre. Pineapples, oak, gum and poplar timber tracts and timber leases and coal tracts. Write us your wants. Waters Realty Co., Walton, St. Lucie County, Florida.

3000 ACRES OF VALUABLE COAL LAND. Have one of the most valuable coal mines ever known in the history of our country, say Philadelphia experts; above the average; estimated to mine 4233½ tons per acre. Also have one of the largest kaolin mines in the South; will work million of tons. Will sell or lease as a whole or by acre. Now is the time to take advantage of the great opportunities. See or write J. L. Elliott, Rutherfordton, N. C.

WILL EXCHANGE for farm, timber, coal or large acreage the following properties: Large apartment downtown section, rented at \$25,950 per annum. Subject to 50% incumbrance, showing a net income of \$14,025. Clear of all expenses. Price \$300,000.

Also three-story steel-constructed apartment. Subject to 33% incumbrance, showing an annual income of \$5376. Price \$60,000. Three large apartments in Boston, Mass., one showing a gross income of \$22,176 and a net income of \$11,100. Price \$222,000. And one rented at \$11,000 per annum and showing a net income of \$3380. Price \$112,000. Also another apartment showing an income of \$10,200 per annum and a net income of \$4561. Price \$105,000. Can trade the last three properties in one deal or separate.

I have all kinds of real estate for sale or exchange everywhere. Wanted all kinds of real estate for sale or exchange. Arthur M. Connor, 223-24 Oxford Bldg., Washington, D. C.

COUNTRY ESTATE

36 ACRES.—Country estate, 4 miles from Baltimore city, boulevard roads; handsome new mansion, tenant-houses and barns. W. E. Ferguson, 217 St. Paul St., Baltimore, Md.

KAOLIN AND FELDSPAR

LOOK! LISTEN!—You electrical people, tile manufacturers, paper glaziers and potters, write me for samples kaolin or feldspar; have large deposits; also talc. D. H. Dent, Roanoke, Va.

PEBBLE PHOSPHATE

FOR SALE—1200 acres pebble phosphate in Polk county, Florida, on R. R.; guaranteed two million tons; analysis averages 72½ per cent. B. P. L. Average overburden 36 ft. A bargain if taken at once. Address Geo. C. Barton owner, Lakeland, Florida.

ROCK PHOSPHATE

FOR SALE—One of the best deposits of hard rock phosphate that can be bought in the State of Florida. Analyses from samples taken from wells one to fifteen, inclusive, show an average of bone phosphate of 81.3%, iron and alumina 2.35%, and sand 1.00%. Now is the time when phosphate lands can be acquired for so much less than ever will be the case in the history of the industry, and men of means and of foresight that will take advantage of the situation will profit enormously. This deposit has recently been prospected and estimated to have not less than 500,000 tons of high-grade rock, which can be bought cheap if sold at once. Harrison & Baskin, Clearwater, Florida.

GRANITE QUARRY

FOR SALE—Developed North Carolina gray granite quarry; also, complete quarrying and cutting plant. A bargain a/c estate. Address No. 1672, care Manufacturers Record.

COAL LAND FOR SALE

FOR SALE—10,568 acres of coal lands in Southwestern Indiana; two or three underlying veins, deepest about 80 feet, which is from 5 to 7 feet in thickness; top very suitable for stripping; best steam coal in the United States; must be sold by February 15, 1915. Price low. Address L. E. Fricke, North Side Bank, Evansville, Ind.

FOR SALE—Cheap coal and mineral lands in Birmingham district; large and small tracts; best investments for present or future developments. S. M. Meigs, Bessemer, Ala.

COAL AND TIMBER LANDS

75,000 ACRES best Tennessee coal and timber land; not mountainous; timber can be rafted to railroad which will soon be built through property; title perfect. Price \$5 per acre. Box 323, Richmond, Va.

TIMBER LAND FOR SALE

4700 ACRES valuable hardwood timber land in the mountains of Southwest Virginia for sale at bargain if taken promptly. Write owner's exclusive agents, Johnson's American & Foreign Real Estate Exchange, 926 Pennsylvania Ave., Washington, D. C.

VIRGIN HARDWOOD TIMBER FOR SALE.—Along the new C. & O. Ry. in Dickenson county, Virginia, about 8000 acres finest boundary in every respect to be found in this section. Prices reasonable. Write C. O. Ramsey, Coeburn, Va.

LUMBER FOR SALE

WE HAVE IT.—Oak, maple and walnut lumber; dry. T. C. Peasley, Amherst, O.

TIMBER FOR SALE

FOR SALE—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

FOUR MILLION FEET OF PINE TIMBER, 12 miles south of Mobile, on two railroads and water. Price \$3 per thousand. C. N. Pooley, 1016 Springhill Ave., Mobile, Ala.

FOR SALE—Hardwood timber on 5000 acres of mountain land immediately on railroad; principally oak, chestnut, hemlock and poplar; pay for as cut and sold. Address: North Carolina Tale & Mining Co., Hewitts, N. C.

REAL TIMBER BARGAIN.—50,000,000 ft. 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Mulherin (owner), Augusta, Ga.

NURSERY STOCK

\$10,000 WORTH OF NURSERY STOCK GIVEN AWAY.—To introduce our high-grade, true-to-name, sure-to-bear, easy-to-sell fruit trees, we are offering for sale 1000 shares of stock of \$10 each, and with each share of stock we give a bond good for \$10 in nursery stock. Applicants must be white, reliable and owners of real estate. Write today. Willis Valley Nursery Company, 902-54 Jefferson Co. Bank Bldg., Birmingham, Ala.

FRUIT, FARM AND TRUCK LANDS

ALABAMA

GOOD INVESTMENT.—We offer for sale 13,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes. This tract can be purchased for the low price of \$7 per acre. Will arrange terms. T. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

FLORIDA

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homesteaders the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Beck, Palatka, Fla.

FOR SALE—In the lake highlands of Florida, choicest lands for oranges, grapefruit, vegetables and winter homesites; location in the big lake district; high and dry; heart of the citrus belt. Land selling fast. Easy terms. Local agents wanted in each town. Address James F. Darnelle, Box 65, Fort Monroe, Va.

A CLIENT of mine, who is a big operator, owns a tract of the best citrus land in Florida. He wants some cash and is in a position to sell at a bargain price, for it was bought under its actual value, and he only asks a small profit. Chandler Campbell, Hamburg, Iowa.

FOR SALE—Some of the best citrus lands in Florida, fast developing section, in tracts of 40 to 1000 acres. Prices \$20 to \$60 per acre. These values are without comparison. An investigation will convince you. Don't write, but come and see for yourself. J. D. Clark, owner, Bartow, Fla.

FREE—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to the Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

FOR SALE—50,000 acres in St. Lucie county, Florida; 20,000 acres in Manatee county; 30,000 acres in Lake county; 6240 acres in Polk county, all well located; excellent colonization tracts. Address P. F. Quinn, Vinton, Iowa.

FLORIDA LAND—Free fare to buyers. Best black soil for fruit-truck farm. Flowing wells. Lowest prices. Owner, S. H. Dewhurst, 1st St., Geneva, Florida.

PINEY POINT, the Deep-Water City. Other towns and would-be towns have to fight and wait for appropriations to get deep-water facilities.

Nature made it for us, and in addition gave us immunity from frost, for just north of Piney Point is the broad expanse of Tampa Bay.

Terapia Island and the Manatee River towns and farms have good water protection, but not deep water. We have both.

Also an abundant supply of artesian water for all purposes.

Nature laid the foundation. We are doing the rest. Will you join us? The Piney Point Land & Improvement Co., Palmetto and Piney Point, Fla. Jno. W. Jackson, Manager.

TEN AND TWENTY-ACRE TRACTS sold on long time; combination soil; orange and truck land; \$5 per acre down, \$1 per acre per month, payable quarterly; raise oranges, grapefruit, strawberries, vegetables and chickens; no tree-killing frosts; flowing wells; healthful climate year round. Write for free booklet. West Coast Realty Co., Inc., Sarasota, Florida. Dept. K.

LOUISIANA

FOR SALE—A sugar plantation containing 1250 acres, 800 of which are in cultivation of cane and corn. Have 40 head of mules, implements, etc. Land contains large homes for owners, cabins, stables, barns, and everything complete for operation of one of the finest pieces of land in Louisiana. Railroad through property. For particulars relative to price and terms address No. 1679, care Manufacturers Record, Balto., Md.

MARYLAND

WELL-LOCATED 23-ACRE FARM, Washington Boulevard, near B. & O. station. You can pick up a bargain. Philip H. Hoffman, 618 Equitable Bldg., Baltimore, Md.

NORTH CAROLINA

SPECIAL OFFER—300 acres of good land, lying in the heart of the cherry district of North Carolina, and is adjoining the cherry mountains. Will make a special price of \$3.90 per acre. Who ever heard of anything to equal this? Only 6 miles from good market or railroad town. J. L. Elliott, your dealer, Rutherfordton, N. C.

FOR SALE—On Slocum Creek, my beautifully situated home, with 550 acres of land. An ideal place for a Northern hunting club. Come and see what there is in Eastern North Carolina. William Buys, Havelock, N. C.

VIRGINIA

THE best agricultural and stock farm of 2700 acres in Eastern Virginia, on navigable tidewater, including 1700 acres of fine timber; brick barns, etc. Green & Redd, Richmond, Va.

VIRGINIA ESTATES—Colonial homes, plantations, farms, suburban homes, Alhambra pippin orchards, timber lands. Write us for what you want. We have it. R. N. Flanagan & Co., Charlottesville, Va.

VIRGINIA FARMS—Fine blue grass, grain and dairy farms in the Piedmont section of Virginia, Culpeper, Fauquier and adjoining counties. Ask for catalogue. The L. M. Allison Co., Real Estate Brokers, Remington, Va. Established 1885.

VIRGINIA FARM FOR SALE—304 acres, 2½ miles from Gordonsville; first-class stock farm; natural growth bluegrass; best apple section; high-grade improvements, including modern dwelling, and dairy barn housing sixty head. Vaughan-Whitehurst Co., Inc., Richmond, Va.

FINANCIAL

CAN net you 6% on your money secured by first mortgage on improved city property at 30 to 50% of its value; bank reference. A. M. Treadwell, Holston Natl. Bank Bldg., Knoxville, Tenn.

PATENTS FOR SALE

PATENT ON STALK PULLER FOR SALE—Will gladly furnish reading matter to explain. Simple and cheap, but a good proposition for the man who has the money to make them. Write R. L. Cater, Forayth, Ga.

PATENT ATTORNEYS

PATENTS—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

C. L. PARKER, Patent Lawyer, formerly member Examining Corps U. S. Patent Office, 924 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process or machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instructions furnished upon request.

PATENT YOUR IDEAS—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

GOVERNMENT PROPOSALS

PROPOSALS FOR STEEL TRUSSES. Steel Cable, Wire Nails, Chain Shackles, Sheet Brass, Drill Bits, Hose, Packing, Mop Heads, Window Glass, Wire Glass, Cant-hook Handles, Milk Cans, Butcher's Blocks, Agate Pitchers, Chinaware, Glass Pitchers, Drinking Glasses, Spoons, Toweling, Crayons, Notebooks, Cardboard, Binder's Board, Blotting Paper, Bond Paper, and Manila Tags. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. January 29, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 894) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR THREE 1000-YARD Steel Dump Scows. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. February 10, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 893) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., January 8, 1915. Sealed proposals will be opened in this office at 3 P. M. February 20, 1915, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at Covington, Tenn. Drawings and specifications may be obtained from the custodian of site at Covington, Tenn., or at this office, in the discretion of the Supervising Architect. O. Wenderoth, Supervising Architect.

PROPOSALS FOR VALVES AND ACCESSORIES for Dry Dock No. 1, Balboa Terminals. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 11:30 A. M. February 24, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 882) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR MATERIAL FOR THE Pumping Plant of Dry Dock No. 1, Balboa Terminals. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. February 24, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 881) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., January 5, 1915. Plans and specifications are now approaching completion for a central heating, lighting and power plant, to be erected in this city under the direction of this office. These plans and specifications will be ready for delivery on or after January 15, 1915. Bids may be submitted for the entire work or for any one of the following sections: Power plant building, complete, with steel stacks; boilers; generating apparatus; pumping equipment; condensers; coal and ash handling apparatus; steam and water piping; switching gear; tunnels; substation apparatus, etc. Prospective bidders should immediately submit to this office applications for plans and specifications, stating the portions of the work upon which they desire to bid. If it appears that the

applicant is in a position to bid on all of the work in any one of the sections of the project, or upon the entire work, the plans and specifications will be forwarded. No plans or specifications will be furnished sub-bidders or others not in a position to submit a bid on all of the work comprised in at least one section. The Department will be able to allow only about 15 days for the preparation of estimates. At the time plans and specifications are forwarded to bidders the date for the opening of bids will be stated, and this date will not be extended. O. WENDEROTH, Supervising Architect.

BOND OFFERINGS

\$75,000 6% Bonds

New Cordell, Okla.

The City of New Cordell, Oklahoma, will receive sealed bids for the sale of \$75,000 worth of its Water-works Extension Bonds on January 18, 1915, at 7:30 P. M. Certified check for 2 per cent. of the bid must accompany same. The city reserves the right to deliver the whole or said issue or any part thereof to the successful bidder, and the bidder must so agree to such provision. Said bonds bear 6 per cent. interest and will be issued in series, maturing in 10, 15, 20 and 25 years, in approximately the following installments:

\$20,000.....	10 years.
\$15,000.....	15 years.
\$15,000.....	20 years.
\$25,000.....	25 years.

J. REID,
City Clerk.

Notice to Contractors and Bond Buyers

Greenville, Tex.

The Board of Permanent Road Commissioners of Road District No. One, Hunt County, Texas, will on January 27, 1915, in the City of Greenville, Texas, consider proposals for the construction of a system of improved highways in said District. Plans, specifications and other information will be on file after January 11, 1915, in the office of Julian C. Feild, Consulting Engineer, Denton and Greenville, Texas, and with W. M. Henly, Secretary of the Board, Greenville, Texas. Funds available approximately \$400,000. Bidding check required, five per cent. (5%) of bid.

At the same time and at the same place the Commissioners' Court of Hunt County, Texas, will receive proposals for the sale of \$400,000 in five per cent. (5%) semi-annual Road District No. 1, Hunt County, Texas, road bonds.

The right to accept or reject any or all proposals is reserved.

W. M. HENLY,
Sec'y Board of Permanent Road Commissioners, Road Dist. No. 1, Hunt County, Texas, and Auditor for Hunt County, Texas.

\$10,000 School Bonds

The Mayor and Board of Aldermen will receive sealed bids to noon on the first Tuesday in February, 1915, for the \$10,000 schoolhouse bonds for the separate district of the town of Hickory, Hickory, Mississippi.

WATERWORKS AND SEWERS

Water and Sewerage Extensions

COLUMBIA, S. C.

Sealed proposals will be received by the Commissioners of the City of Columbia, S. C., until 10 A. M. January 29, 1915, for extensions to the water and sewerage systems.

The work will consist of approximately ten miles of water mains, ranging in size from 6" to 12", and ten miles of sewer mains from 8" to 15".

Specifications, form of proposal and contract and plans may be seen at the office of the Engineer-Superintendent after January 5, or will be mailed upon application to the Engineer, accompanied by the payment of five dollars for the specifications and form of proposal and contract, and five dollars for the plans, which payments will be refunded upon the return of the same in good condition within ten days after the letting.

The right is reserved to reject any or all bids.

F. C. WYSE,

Engineer-Superintendent.

E. M. DuPRE,
Council Superintendent.

Water-Works Materials

NOTICE.

The City of Sweetwater, Texas, will consider proposals at 3 P. M. of January 30, 1915, for the purchase of the following materials:

50 fire hydrants, 6" inlet, one 4" outlet, two 2½" outlets, 6-foot barrel, automatic drain, and working pressure of 125 lbs. per sq. inch.

60 iron body, hub ends, gate valves in sizes ranging from 4" to 12", with working pressure of 125 lbs. per sq. inch.

½ dozen blow-off valves for 12" line, with working pressure of 60 lbs. per sq. inch.

½ dozen automatic air escapes for same line.

1500 18" extension service boxes.

1500 water meters

1500 Mueller corporation cocks in sizes from ½" to 1".

1500 wiped joint 18" goosenecks connections from ½" to 1".

Above are approximate quantities required, and the city reserves the right to purchase more or less as desired, or to reject all proposals.

Dealers in these materials are invited to submit data and prices on or before the above-mentioned date.

GEO. T. WILSON, Mayor,
Sweetwater, Texas.

PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

WATERWORKS AND SEWERS

Water-Works Equipment

Eastover, S. C.
Bids will be received until January 13, 1915, for one hemispherical tank and tower, one engine, power head, water pipe and appurtenances.

Sealed bids will be received by the Board of Public Works of the Town of Eastover until 2 o'clock P. M. January 13, 1915, for the following material, etc.:

One steel hemispherical bottom water tank with plate roof and six-inch brass expansion joint. Capacity 25,000 gallons.
One eighty-foot steel tower with 24" metal balcony and metal ladder.
One 12 H. P. throttling governor kerosene engine, geared base, with deep-well working head.

Water Pipe.

Approximate:
400 L. ft. 8" A class C. I. Pipe or Matheson Lock Joint.

1820 L. ft. 6" A class C. I. Pipe or M. L. J.

150 ft. 4" A class C. I. Pipe or M. L. J.

2628 ft. 2" Gal. I. Pipe or M. L. J.

2000 ft. 1" Gal. I.

One 8" 2-way 2" Bury Hydrant.

Six 6" 2-way 2" Bury Hydrants.

One 4" 2-way 2" Bury Hydrant.

One 8" Gate Valve and Valve Boxes.

Five 6" Gate Valves and Valve Boxes.

One 4" Gate Valve and Valve Boxes.

Ten 2" Gate Valves and Valve Boxes.

Four 1" Gate Valves and Valve Boxes.

Five 2" 1/2" Gal. Tees.

100 2" 1/2" Gal. I. Tees.

20 1" 1/2" Gal. I. Tees.

3 3/8" C. I. Tees.

1 1/2" C. I. Tees.

1 1/4" C. I. Tees.

5 6" C. I. Plugs.

2 4" C. I. Plugs.

100 3/4" Screw Plugs.

50 3/4" Street Elbs.

Each bid must be accompanied by a certified check, drawn to the order of the Board of Public Works of the Town of Eastover, S. C., to an amount of 2 1/2 per cent. (2 1/2%) of the amount of bid. All material will be paid for cash and must be satisfactory to the Engineer. Plans and specifications may be obtained at the office of E. N. Chisolm, Jr., C. E., Room 20 Clark Law Bldg., Columbia, S. C., upon payment of \$3. The right is reserved to reject any and all bids.

J. A. BYRD,
H. G. BATES,
S. W. McKENSIE,
H. W. KING,
Clerk Board of Public Works.
E. N. CHISOLM, Jr., Engr.
W. H. MILLER, Asso.

Storm and Sanitary Sewer Construction

San Antonio, Tex., January 9, 1915.

Sealed bids will be received by the undersigned until 4 o'clock P. M. on February 1, 1915, for the construction and completion of sanitary sewers and storm-water sewers previously let to Wm. G. Schuirth Co., in approximate amounts and sizes as follows:

Cherry Street Sanitary Intersecting Sewer, Contract Section No. 20.

Vitrified Sewer Pipe.	Vitrified Segmental Blocks.
3000' of 8"	2730' of 30"
1040' of 10"	6090' of 36"
950' of 12"	1065' of 39"
1764' of 15"	750' of 45"
458' of 20"	2330' of 48"
	45' of 60"

With all necessary inlets, manholes, etc., etc.

Grove Avenue Storm Sewer Contract, Section No. 112.

No. 2 D. S. Vitrified Pipe.	Plain Monolithic Concrete.
900' of 12"	980' of 64"
700' of 15"	740' of 72"
350' of 18"	390' of 74"
	5020' of 76"

With all necessary inlets, manholes, etc., etc.

Cherry Street Storm Sewer, Contract Section No. 113.

No. 2 D. S. Vitrified Pipe.	Plain Monolithic Concrete.
2800' of 12"	700' of 24"
750' of 15"	430' of 28"
650' of 18"	490' of 36"
	1030' of 44"
	390' of 50"
	470' of 54"
	940' of 58"
	2380' of 60"
	1840' of 68"
	300' of 74"
	2050' of 76"

With all necessary inlets, manholes, etc., etc.

Separate proposals will be required on each of the three sewers, and shall be and remain, regardless of each of the other, subject to acceptance by the City Council for a period of two weeks after the date for receiving said bids, or not being so accepted shall be deemed to have been rejected.

Separate certified checks or cashier's checks on San Antonio banks equal to 10 per cent. of bid must accompany each proposal, made payable to J. Frank Gallagher, City Treasurer, and construction bond of 25 per cent. will be required of the successful bidder.

The City of San Antonio reserves the right to reject any and all bids.

For bidders' blanks, specifications and other information address Hans Helland, City Engineer.

FRED FRIES,
City Clerk.

Cast Iron Water Pipe, Etc.

Office of the Mayor,
Asheville, N. C., January 6, 1915.

Bids will be received at the office of the City Clerk until February 12, 1915, for furnishing and laying about 5550 feet of 10" cast-iron water pipe (Class B), with the necessary specials, gates and hydrants.

Specifications of the work can be obtained at the office of the City Engineer.

Bids are also asked for furnishing f. o. b. cars at Asheville, N. C., 5550 feet of 10" cast-iron water pipe (Class B), about 186.5 tons. The city reserves the right to reject any and all bids.

F. L. CONDER,
City Clerk.

PAVING AND GOOD ROADS

State Highway

STATE OF MARYLAND.
STATE ROADS COMMISSION.

601 Garrett Building,
Baltimore, Md.

NOTICE TO CONTRACTORS.

Sealed proposals for building 5 sections of State Highway, aggregating about 10.55 miles in length, as follows:

Contract No. G-8—GARRETT COUNTY: One section of road through Grantsville, about .85 mile in length. (Macadam or Concrete.)

Contract No. P-13—PRINCE GEORGE'S COUNTY: One section of road from Meadows to Camp Spring, about 3.03 miles in length. (Macadam or Concrete.)

Contract No. P-14: One section of road from Upper Marlboro to Hills Bridge, about 2.45 miles in length. (Macadam or Concrete.)

Contract No. Q-12—QUEEN ANNE'S COUNTY: One section of road through the town of Church Hill, about .65 miles in length. (Macadam or Concrete.)

Contract No. S. M-9—ST. MARY'S COUNTY: One section of road from Ridge to the Confederate Monument, about 3.33 miles in length. (4" Gravel Surfacing.)

Will be received by the State Roads Commission at its offices, 601 Garrett Building, Baltimore, Md., until 12 M. on the 19th day of January, 1915, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications. Specifications and plans will be furnished by the Commission upon application and cash payment of \$1 for each contract, as hereafter no charges will be permitted.

No bid will be received unless accompanied by a certified check for the sum of five hundred (\$500) dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission, this 29th day of December, 1914.

O. E. WELLER,
Chairman.

WM. L. MARCY,
Secretary.

Hauling

STATE OF MARYLAND.

STATE ROADS COMMISSION.

NOTICE TO CONTRACTORS.

Sealed proposals for hauling out approximately 6219 tons stone chips for oiling State Roads, as follows:

Contract No. 1, 352 tons.

Contract No. 2, 575 tons.

Contract No. 3, 25 tons.

Contract No. 4, 767 tons.

Contract No. 5, 945 tons.

Contract No. 6, 450 tons.

Contract No. 7, 1180 tons.

Contract No. 8, 947 tons.

Contract No. 9, 978 tons.

Will be received by the State Roads Commission at its offices, 601 Garrett Building, Baltimore, Maryland, until 12 M. on the 25th day of January, 1915, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications. Specifications and plans will be furnished by the Commission upon application.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission this 12th day of January, 1915.

O. E. WELLER,
Chairman.

WM. L. MARCY,
Secretary.

Street Paving

OFFICE OF THE PAVING COMMISSION.
BALTIMORE, MARYLAND.

Separate sealed proposals, executed in duplicate, addressed to the Board of Awards, care of the City Register, will be received by him at his office in the City Hall until 11 A. M. Wednesday, January 20, 1915, to grade, curb and pave with Sheet Asphalt, Vitrified Block and Granite Block, all on a concrete base, the streets listed in the following contracts:

Vitrified Block and Granite Block Paving Contract No. 102.

From	To
Franklin St.	Fremont Ave. Penna. Ave.
Druid Hill Ave.	Paca St. McMechen St.
George St.	Myrtle Ave. Penna. Ave.
Vitrified Block.....	21,000 sq. yds.
Granite Block.....	6,730 sq. yds.
Certified Check.....	\$1300

Sheet Asphalt, Vitrified Block and Granite Block Paving Contract No. 103.

From	To
Fremont Ave.	Lexington St. Penna. Ave.
George St.	Fremont Ave. Myrtle Ave.
Biddle St.	Shields Pl. Brevard St.
Druid Hill Ave.	Eutaw St. Paca St.
Druid Hill Ave.	McMechen St. North Ave.
Sheet Asphalt.....	36,800 sq. yds.
Vitrified Block.....	11,750 sq. yds.
Granite Block.....	11,250 sq. yds.
Wood Block.....	800 sq. yds.
Certified Check.....	\$4000

Sheet Asphalt, Vitrified Block and Granite Block Paving Contract No. 104.

From	To
Carey St.	Pratt St. North Ave.
Edmondson Ave.	Fulton Ave. Gilmer St.
Edmondson Ave.	Chilbourn St. Fremont Ave.
Sheet Asphalt.....	34,550 sq. yds.
Vitrified Block.....	15,800 sq. yds.
Granite Block.....	2,330 sq. yds.
Wood Block.....	1,650 sq. yds.
Certified Check.....	\$3300 sq. yds.

Sheet Asphalt, Vitrified Block and Granite Block Paving Contract No. 105.

From	To
Greene St.	Lexington St. Franklin St.
Read St.	Cathedral St. Calvert St.
Dolphin St.	Fremont Ave. Brevard St.
Lanvale St.	Druid Hill Ave. Madison Ave.
Mercher St.	Arlington Ave. Division St.
Sheet Asphalt.....	20,500 sq. yds.
Vitrified Block.....	13,000 sq. yds.
Granite Block.....	4,560 sq. yds.
Wood Block.....	900 sq. yds.
Certified Check.....	\$2500

The figures above represent the approximate quantities of the principal items appearing in the contracts.

Specifications and proposal sheets can be obtained upon application to the office of the Paving Commission, City Hall. A deposit of \$5 will be required for a specification covering each contract. This will not be refunded unless a bid is filed.

Plans and profiles are on file for the information of bidders in the office of the Consulting Engineer.

The Board of Awards reserves the right to reject any and all bids. A certified check of the bidder on a Clearing-house bank, drawn to the order of the Mayor and City Council of Baltimore to the amount as recited above, must accompany each bid.

The successful bidder will be required to furnish bond and to comply with the City Charter respecting contracts.

By order of the Paving Commission.

R. KEITH COMPTON,
Chairman and Consulting Engineer.

J. MYERS HEDIAN,
Secretary.

Approved: JOHN HUBERT,
Acting Pres. Board of Awards.

State Highway

STATE OF MARYLAND.

STATE ROADS COMMISSION.

NOTICE TO CONTRACTORS.

Sealed proposals for building one section of State Highway, as follows:

Dorchester County.

Contract No. D-11—One section of road from Linkwood to Mt. Holly, about 2.69 miles in length (concrete or macadam), will be received by the State Roads Commission at its offices, 601 Garrett Building, Baltimore, Maryland, until 12 M. on the 19th day of January, 1915, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications. Specifications and plans will be furnished by the Commission upon application and cash payment of \$1, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of five hundred (\$500) dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission this 7th day of January, 1915.

O. E. WELLER,
Chairman.

WM. L. MARCY,
Secretary.

Paving and Bridge Construction

STATE OF MARYLAND.
STATE ROADS COMMISSION.
NOTICE TO CONTRACTORS.

Sealed proposals, as follows:

Contract No. Bc-17-Sec. 6, BALTIMORE CITY—

Approximately 1.50 miles of Sheet asphalt paving for Hanover Street Bridge and approaches.

Contract No. Bc-17-Secs. 7 and 8, BALTIMORE CITY—

One (1) reinforced concrete bridge (16-30' and 1-32') spans, girder construction.

One (1) reinforced concrete bridge (7-15' spans, girder construction.

Will be received by the State Roads Commission at its offices, 601 Garrett Building, Baltimore, Maryland, until 12 M. on the 19th day of January, 1915, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications.

Specifications and plans will be furnished by the Commission upon application and cash payment of \$1, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of five hundred (\$500) dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission this 4th day of January, 1915.

O. E. WELLER,
Chairman.

WM. L. MARCY,
Secretary.

MISCELLANEOUS

Clothing, Shoes, Cots, Etc.

Sealed bids will be received and opened by Board of County Commissioners of St. Lucie County, Fla., at 2 P. M. February 2, 1915, for furnishing clothing, shoes, cots, etc., for county convicts.

J. E. FULTZ,
County Clerk,
Fort Pierce, Fla.

Steel Stand Pipe

NOTICE.

The City of Sweetwater will consider proposals at 2 P. M. of January 20, 1915, for furnishing and erecting a 250,000-gallon capacity cylindrical steel standpipe, 28" in diameter and 60' high. Concrete base will be constructed by the city. Manufacturers are invited to submit plans, specifications and prices on or before the above date.

GEO. T. WILSON, Mayor,
Sweetwater, Texas.

Gravity Conduit

NOTICE TO CONTRACTORS.

The City of Sweetwater, Texas, will open bids at 2 P. M. on January 20, 1915, for the construction of a 12" diameter cast-iron gravity conduit from Lake Trammell to Sweetwater, a distance of 6 1/2 miles. Engineer's estimate of cost is \$16,000, not including pipe, which has been purchased by the city.

Plans and specifications are on file in the office of the City Secretary. A deposit of \$15 will be required to guarantee the return of same in good condition.

The city reserves the right to reject any or all bids.

W. H. BARTLETT,
City Secretary,
Sweetwater, Texas.

Proposals for Dredging in the Harbor of Baltimore

DEPARTMENT OF PUBLIC IMPROVEMENTS.

SUBDEPARTMENT HARBOR BOARD,
BALTIMORE, MD.

Proposals for dredging the main channel north from Lazaretto Light to the piers of the Transatlantic Liners, all as shown on plans, will be received until 11 o'clock forenoon of Wednesday, January 20, 1915.

Proposals must be addressed to the Board of Awards and sent to the City Register's Office, City Hall, accompanied by a certified check of the bidder for \$3000, drawn on a Clearing-house bank and payable to the Mayor and City Council of Baltimore.

The right is reserved to reject any or all proposals. Bond in the amount of the contract price will be required for the proper performance of the contract.

Approximate quantity of material to be dredged is 2,000,000 cubic yards.

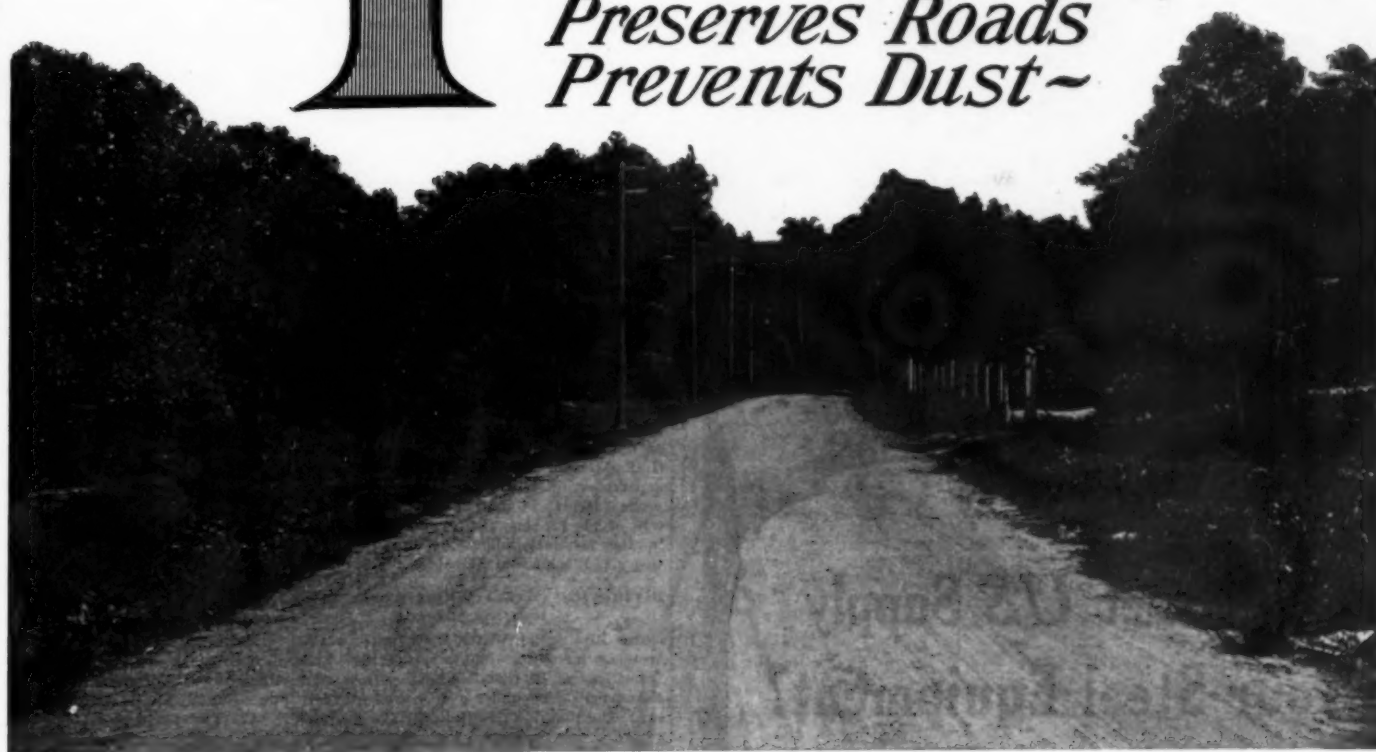
O. F. LACKEY,
Harbor Engineer.

Approved: JOHN HUBERT,
Acting President Board of Awards.

Plans and specifications can be obtained at the office of the Harbor Engineer, City Hall, Baltimore, Md.

Tarvia

*Preserves Roads
Prevents Dust~*



Marshall Ave., Webster Groves, Mo.
Treated with "Tarvia X".

Tarvia in Webster Groves—

MAYOR BIEDERMAN'S satisfaction with Tarvia led him to have another mile of it laid this year.

Next year we are confident he will double his mileage again, for that is the common experience in towns where Tarvia is used.

On July 7, 1914, he wrote us:

"Marshall Avenue, about one-half mile, was resurfaced last summer, using 'Tarvia X' binder, and stood the heavy hauling in great shape. This stretch of roadway includes a variety of conditions, from a pocket or low piece of land hard to drain to a hill of 10% grade. This spring it appeared that considerable of the top dressing had disappeared and the macadam showed plainly, but with the hot

weather some of the Tarvia came to the surface and formed another covering.

"As a self-healing pavement Tarvia is great. The Marshall Avenue job I considered one of the most difficult in St. Louis County, and when I say the road withstood the exceedingly heavy traffic for one year and is today in perfect condition, without any expenditure or upkeep on it this year, I believe that statement in itself to be a recommendation for your material."

W. F. BIEDERMAN, Mayor.

Tarvia is a coal tar product of great viscosity. It bonds the stone together in a tough matrix, making the road automobile-proof, water-proof, frost-proof and free of dust.

Municipal authorities and taxpayers like Tarvia because it means good roads at minimum cost.

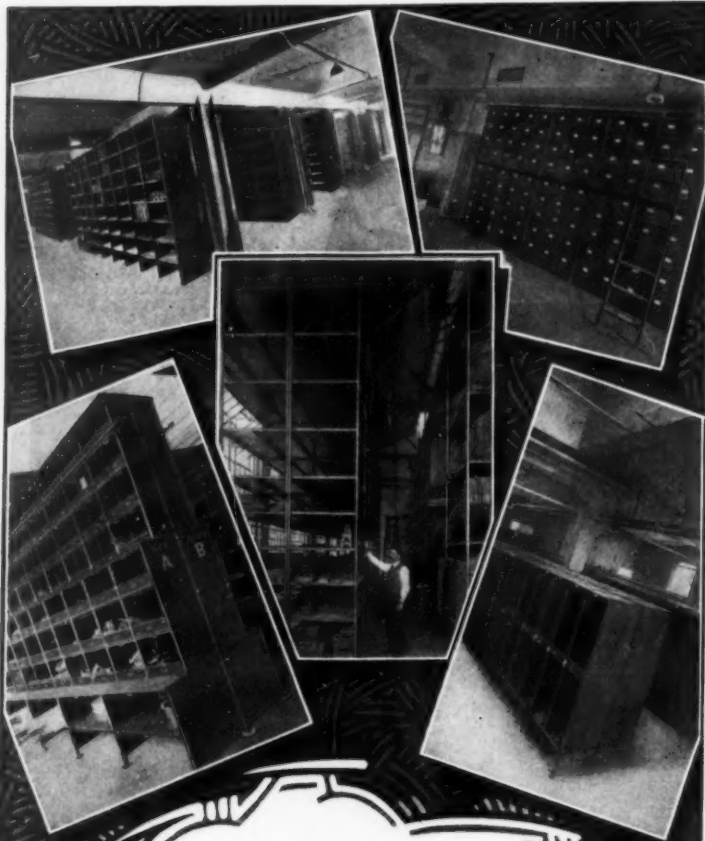
Booklets on request. Address our nearest office.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati Pittsburgh
Detroit Birmingham Kansas City Minneapolis Salt Lake City Seattle

THE PATERSON MFG. CO., Limited: Montreal Toronto Winnipeg Vancouver St. John, N. B. Halifax, N. S. Sydney, N. S.





Why Let US Supply Your Steel Equipment?

OUR installations are made only on a service system basis. We treat each as a separate problem, apply 25 years of engineering experience to its solution, and so make sure that all Merritt shelving, bins or lockers sold are exactly suited to each particular case.

MERRITT *Free Advisory Service* Steel Equipment

We call this preliminary work Merritt Free Advisory Service, and it is this, backed also by the design and quality of every piece of steel equipment which bears the Merritt name plate, that makes every installation a Merritt salesman. The repeat orders are what make it pay us to give so much service before we sell the goods to insure satisfaction afterwards.

Merritt Steel bins, shelving, etc., have been selected during the last 13 years by hundreds of such concerns as:

- 1—Pennsylvania Railroad Company.
- 2—Philadelphia Electric Company, Phila., Pa.
- 3—Baltimore Bargain House, Baltimore, Md.
- 4—Sanborn Map Co., New York City.

An inquiry for further particulars places you under no obligation, but it gives us an opportunity to show how successfully Merritt Steel Equipment can meet and solve your problem.

Please be sure to give us as much information as possible and your complete address when you write.

MERRITT & COMPANY

51 N. Front St. *Here Dodge, Receiver* Camden, N. J.
Manufacturers of Steel Factory and Office Equipment since 1889

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Lindemuth Engineering Co.

H. H. Lindemuth of York, Pa., announces his withdrawal from the York Engineering Co., Inc., and the organization of a new company under the name of Lindemuth Engineering Co. Offices have been opened by the Lindemuth Engineering Co. in the John Hartman Bldg., York, Pa.

Commissioned to Design School Building.

Verus T. Ritter, architect, Huntington, W. Va., announces that his office at Portsmouth, O., under the firm name of Ritter & Bates, has been awarded the commission of designing and superintending the erection of the 12-room fireproof Central Grade School building at Chillicothe, O. Plans and specifications for this work will be prepared and ready for distribution in about one month.

Opens Florida Office.

To keep in close touch with its Southern business, the Chicago Bridge and Iron Works, builder of steel towers and tanks, 105th and Throop Sts., Chicago, has opened an office at Monticello, Fla., in charge of E. G. Ladd, who has been in the contracting department of the company for more than 25 years. Mr. Ladd will look after the interests of the Chicago Bridge and Iron Works in the territory embracing the States of Georgia, Florida and Alabama.

Blytheville (Ark.) Water-works System for Sale.

The Blytheville Water Co.'s water-works system, including plant, properties and franchises at Blytheville, Ark., will be sold February 5, 1915, under a decree of foreclosure. The plant, which is located in a grow-

ing town of 6000 people, is said to be in successful and paying operation. Information regarding price, terms of sale, etc., may be obtained by addressing F. G. Proutt, receiver and special commissioner, 374 Randolph Bldg., Memphis, Tenn.

Life Insurance Policy for Each Employee.

Recognizing that its steady, substantial growth is due in a large measure to the co-operation of its employees, and seeking to advance the welfare and encourage the continuous mutual co-operation and loyalty of its men, the Gallon Iron Works & Manufacturing Co. of Gallon, O., manufacturer of culvert pipe, road makers' machinery, contractors' and municipal supplies, made a Christmas presentation of a life insurance policy to every one of its employees from the president down. The policies were issued through the group insurance department of the Equitable Life Assurance Society of the United States, and guarantee in the event of death from any cause to pay the salaries of such employees to their families each month for one year.

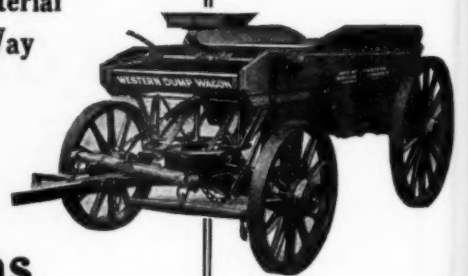
Two New England Sheet Metal Manufacturers Consolidate.

Consolidation of the Eastern Expanded Metal Co. and the Penn Metal Co. was effected January 1, 1915, with George P. Bulard president and George A. Sagendorph treasurer and general manager. The new concern will be known as the Penn Metal Co., with main offices 201 Devonshire St., Boston, Mass., and sales offices located in different parts of the United States, including a Southern sales office at Winston-Salem, N. C. The company reports that with the

Handle Your Material
the Up-to-date Way

with

Dump Wagons



Western Dump Wagons

are saving money and increasing the profits of progressive contractors all over the Country. With Westerns you can be sure of more work in less time; be sure that they will be on the job working and not in the repair shop, and be sure they will "stand up" longer than most dump wagons, due to their exceptionally strong construction.

Westerns are designed by experts; built by men that know how to build dump wagons and made of only the best thoroughly tested material. They have so many advantages we cannot tell them all here.

Why not write today for illustrated catalog?

WESTERN WHEELED SCRAPER CO.

AURORA, ILLINOIS

EARTH AND STONE HANDLING MACHINERY

additions to the modern reinforced concrete factory building now constructed at Cambridge, Mass., it will be the largest metal-working plant east of Pittsburgh, and under the same roof will be manufactured every form of metal roofing, siding, concrete reinforcement, metal lath, metal corner bead, irrigation, culvert and gutter pipe, hollow metal windows, etc. A highly organized department for the actual construction of fireproofing in modern buildings is also maintained by the company.

Engineering and Appraising Company Organized.

The Maryland Engineering, Contracting & Machinery Co., with offices 707 Munsey Bldg., Baltimore, has been organized with Alfred M. Quick, C.E., chief engineer, and Edward G. Rost, M.E., superintendent, to act as engineers, erectors, operators, appraisers and selling agents. Mr. Quick was for 11 years chief engineer of the Baltimore water department, and has been for about 15 years a consulting engineer on power plants and general engineering work. Mr. Rost was formerly

erecting engineer for the Richmond Locomotive Works, superintendent of the mechanical division of the Baltimore water department for about 14 years, and was about eight years inspector of materials, chief locomotive inspector and assistant master mechanic for the Baltimore & Ohio Railroad. Another member of the organization, John W. Diven, who for about 25 years owned and operated foundry and machine plants, has been for several years in the machinery supply business. The field of work of the new company embraces the designing, installation and connecting up of complete power-plant equipments, supplying and installing engines, pumps, motors, boilers, steam specialties, machinery, etc., expert investigation of power-plant operation and the testing and inspection of coal, oil, steel, castings, cement and other materials. With the wide experience and ability of the personnel of the new organization, special advantages are assured to those seeking engineering, contracting and appraisal work. Correspondence is solicited by the company in regard to representation of reputable machinery and equipment concerns.

TRADE LITERATURE.

The West Virginia Rail Co.

A booklet containing sectional drawings of rails and rail and angle-bar punching diagrams, giving dimensions and weights of rails manufactured by the West Virginia Rail Co. of Huntington, W. Va., has recently been issued. Comparative table showing price in gross tons with corresponding price in net tons, railroad spike, track bolt and crossie tables and other information of value in railroad construction is also included in the booklet.

American Machinery Co.

Beginning with January 1, the Southern Saw & Machinery Works, 103 S. Forsyth St., Atlanta, Ga., discontinued the handling and jobbing of machinery and supplies, having disposed of its machinery and supply department to M. P. Martin and J. L. Almon, who have organized the American Machinery Co. with offices at 103 S. Forsyth St., Atlanta. The Southern Saw & Machinery Works will confine its operation solely to

the manufacture and jobbing of circular saws and accessories. Reputable manufacturers and others seeking representation in the South are invited to correspond with the American Machinery Co. regarding establishment of agencies.

Holland Pumping Outfits.

Holland modern methods of installing efficient pumping outfits on farms and suburban developments are given in a catalogue issued by the Holland Machine Co., 410-16 E. 32d St., New York. Holland pumping outfits are said to be distinctive in quality and design of construction, having been designed and built in accordance with advanced hydraulic engineering practice, based on years of practical experience. Advantages of Holland methods and operation of Holland pumping outfits, including deep well working cylinders, rotary and centrifugal pumps and electrically-driven pumps, together with pump capacity tables, water-pressure tables, wrought-iron well pipe dimension and weight tables for steam, gas, water, oil, etc., are also contained in the catalogue.

Special Advertisements of General Interest.

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OF THE

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The entire water-works, plant and system of the Blytheville Water Company at Blytheville, Arkansas, and all its properties and franchises, will be sold February 5, 1915, under decree of foreclosure. The town of Blytheville has a population of about six thousand, and is one of the growing towns of the State. The plant is now in successful and paying operation. The sale will be made at Blytheville on a credit of three months, the purchaser to give bond with approved security, bearing interest at 6 per cent. from date of sale, and a lien retained on the properties for the payment of the purchase price.

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Large stock of smaller motors and dynamos, both A. C. and D. C. Let us have your requirements.
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Electrical apparatus of all kinds at lowest prices.

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We Buy and Dismantle

FACTORIES

MILLS

MACHINE SHOPS

and all kinds of

INDUSTRIAL PLANTS

We are always in the market to buy

Scrap Iron and Steel OF EVERY KIND

FRANK SAMUEL

Harrison Building

15th and Market Sts. Philadelphia, Pa.

GENERAL ELECTRIC MOTORS

220 volts, like new, about 2 years old.

2 50 H. P., 650 shunt wound D. L. C...\$375.00
1 50 H. P., 650 compd. wound D. L. C...400.00
1 25 H. P., 650 shunt wound D. L. C...250.00
1 25 H. P., 650 compd. wound D. L. C...205.00
2 15 H. P., 925 compd. wound C. V. C...170.00
1 15 H. P., 635 compd. wound D. L. C...300.00
GEO. SACHSENMAIER & CO.
143-45 N. Third Street Philadelphia, Pa.

Direct Current Generating Sets, Boilers, Feed Water Heaters Horizontal and Vertical Steam Engines

Air Compressors Steam Pumps and Mine Equipment

All in Excellent Condition.

The above equipment displaced from 19 coal mines by the introduction of Central Station Power.

Equipment Sales Department NEW RIVER CO. Macdonald, W. Va.

1876

1915

We are optimistic enough to believe that there will be a big demand for good rebuilt second-hand machinery within the next month or two.

Naturally prices will advance with the increased demand. Why not take advantage of the prices we are now quoting.

We have a large stock of Direct and Alternating Current Motors, Direct Connected and Belted Generators, Boilers, Engines, Pumps, Machine Tools and Woodworking Machinery.

We must move quickly some of our largest rebuilt second-hand outfits, among which are large Planers, Lathes, Boring Mills, Punch Presses, Direct Connected Generators and Boilers. This is to get floor space for some large purchases of smaller tools. Attractive prices will be quoted.

SPECIALS

Machine Tools

60"x60"x14" Sellers Planer, 4 heads.
60"x60"x14" Pond Planer, 2 heads.
48"x48"x15" Sellers Planer, 2 heads.
72" Bickford Vertical Boring Mill, 2 heads.
60" Sellers Vertical Boring Mill, 2 heads.
48" Sellers Vertical Boring Mill, 2 heads.
35" Niles Vertical Boring Mill, 2 heads.
3500 lbs. Bement-Miles Double Frame Steam Hammer.
350 lbs. Bement-Miles Single Frame Steam Hammer.
200 lbs. Bradley Helve Hammer.
No. 3 Kempsmith Plain Milling Machine with universal dividing heads.
36"x12" Hess Heavy Duty Slab Milling Machine.
12" Niles Slotter.
38"x20" Fifeild Lathe, triple geared.
26"x12" Fifeild Lathe, triple geared.
18"x14" Schumacher & Boye Lathe.
16"x 6" Hendey Lathe, taper attachment.
14"x 8" Hendey Lathe.

Power Equipment

WATER TUBE BOILERS

Two 350 H. P. Sterling Water Tube, 150 lbs. steam working pressure.
Three 250 H. P. Franklin Water Tube, 150 lbs. steam working pressure.

RETURN TUBULAR BOILERS

Six 200 H. P. 78"x20" Horizontal, 125 lbs. steam working pressure.
Eight 150 H. P. 72"x18" Horizontal, 125 lbs. steam working pressure.

CORLISS ENGINES

24"x42" Allis, left hand.
18"x42" Watts-Campbell, right hand.
16"x36" Allis, left hand.
2 14"x36" Scottsdale, right and left hand.
12"x36" Allis, left hand.
12"x30" Allis, left hand.
SPECIAL: 36"x72"x72" Bass Cross Compound, 3000 H. P.

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DIRECT CONNECTED UNITS

150 K. W. 250-volt D. C. Crocker-Wheeler, with Wright Horizontal Tandem Compound 14½"x24"x16" Engine.
105 K. W. 250-volt 3-phase 60-cycle A. C. Westinghouse Alternator, with 15"x16" Buckeye Horizontal Automatic Engine.
50 K. W. 125-volt D. C. Westinghouse, with Westinghouse Vertical Compound Automatic Engine 10"x18"x10".
35 K. W. 125-volt D. C. General Electric, with Harrisburg Horizontal Automatic Engine 10"x12".

Motors and Generators

Motors, direct and alternating current, all sizes from 1 to 100 H. P., in stock for immediate delivery.

Send for our list.

Generators, large stock from 1 K. W. to 75 K. W., 110 and 220-volt, direct and alternating current.
SPECIAL: 2 500 K. W. 550-volt 3-phase 60-cycle General Electric Alternators, 360 R. P. M.

FRANK TOOMEY, Incorporated

127-131 North Third Street

PHILADELPHIA, PA.

Railroad and Contractors' Equipment and Supplies.

Georgia Car & Locomotive Company
ATLANTA, GA.
LOCOMOTIVES
FREIGHT CARS PASSENGER COACHES
S. H. Std. Car Trucks for Logging
LARGEST STOCK REBUILT EQUIPMENT IN U. S.

GEORGE M. NEWHALL ENGINEERING CO. Rolling Mills—Hyde, Clearfield Co., Pa.
New York GENERAL OFFICES: PHILADELPHIA, PA. Pittsburgh
Manufacturers of LIGHT STEEL RAILS
12, 16, 20, 25, 30, 35, 40 and 45-lb. SECTIONS
SPICE BARS, TRACK BOLTS AND SPIKES, FROGS AND SWITCHES
RELAYING STEEL RAILS
IN ALL SECTIONS FOR IMMEDIATE SHIPMENT FROM STOCK

RAILS—ALL SIZES
2000 tons 20 to 45 lb. with bars.
2750 tons 50 to 67 lb. with bars.
3000 tons 70 to 90 lb. with bars.
Also new spikes, bolts and switch material.
Any delivery. Inquire for prices.
SCRAP
We are always in the market for old railway material, relaying rail and scrap of all kinds, for cash, so why not sell direct?
HIRSCH ROLLING MILL CO.
Office and Rolling Mills St. Louis, Mo.

A. S. C. E. Sections
LIGHT STEEL RAILS
PROMPT DELIVERY.
8, 12, 16, 20, 25, 30, 35, 40 pounds per yard.
With Splices and Spikes.
UNITED STATES RAIL CO.
Manufacturers, Cumberland, Md.
Certificates of Inspection by Hildreth & Co., Inspecting Engineers of New York City, assuring absolutely first quality, furnished free of cost.

Locomotives
Four wheel type
40 tons; 17"x24"; 160 lbs. pressure
Overhauled Modern
E. H. WILSON & COMPANY
ABRAHAM BUILDING
PHILADELPHIA

FOR SALE
One 10-ton gasoline macadam roller, latest type, standard make, nearly new. Will sell at a low price. Write
COOPER CONTRACTING COMPANY
Care Manufacturers Record

Laborers Free

We supply direct on receipt of trial order, male help, all nationalities, in any number, for skilled or common labor work; men to board themselves or with employers. Bridge, Concrete Form Carpenters and Helpers, Machinists, Engineers, Firemen, Coal Passers, etc.

We do not misrepresent, but always describe to our applicants the nature of work, working conditions and wages exactly as stated by employers giving us their orders—hence no dissatisfaction between any parties at interest.

We get the best class of experienced Woodmen, Trackmen, Quarrymen, Steam Shovel Skinners, Farm Hands, Coal Miners, Factory Help, Shops, Yards, Railroad and Contract Laborers.

We do not charge employers for men or services; they are both FREE.

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STEEL RAILS
60-67s-70s-74s with angle bars
Send your inquiries.

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J. E. FRANKS, Agt.
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CONTRACTORS & RAILWAY EQUIPMENT
QUARRY & BRICK PLANT MACHINERY
OUR SQUARE DEALINGS WILL WARRANT YOUR CONTINUED PATRONAGE.
BELL BLOCK CINCINNATI, O.

RELAYING RAILS FOR SALE
500 Tons 80-lb. Rails.
500 Tons 90-lb. Rails.
Several Locomotives and Cars.
CHAS. HYDE
Commonwealth Bldg. PITTSBURGH, PA.

RAILS AND ACCESSORIES
NATIONAL STEEL RAIL CO.
I. H. COHN, Pres. and Genl. Mgr.
1030-32 Pierce Bldg. ST. LOUIS, MO.

Tractor-Roller and Wagons FOR SALE
A Buffalo Steam Ten-Ton Tractor and Twelve Five-Ton Wagons for use with it. Used about three months.
F. A. WOOD, County Commissioner
St. Petersburg, Fla.

EQUIPMENT BARGAINS
1 Contractor's outfit; Wagons, Slop Scrapers, Dump Cars, 36" gauge.
1 Little Giant Steam Shovel.
1 Huber Traction Engine.
1 Hoisting Engine.
1 Centrifugal Pump.
1 Boilers, Stack, etc.
1 Porter build Locomotive, Saddle-Tank, 7x12, 35" gauge, new.
1 standard gauge 17x24 Baldwin.
1 36" gauge 9x14 Saddle-Tank Vulcan.
1 36" gauge 9x14 Saddle-Tank Porter.
1 10x16 36" gauge Richmond Loco. Works
6-wheel Saddle-Tank.
1 43" gauge American type Va. Iron Works, 9x16.
1 43" gauge Saddle-Tank Porter.
1 46-ton Vulcan Steam Shovel on trucks, standard gauge.
J. H. MACLEARY SUFFOLK, VA.

Passenger Coaches
Released by Pennsylvania R. R.
HENRY LEVIS & CO.
26 South 15th Street PHILADELPHIA

Relaying Steel Rails

35-lb., 40-lb., 56-lb., 60-lb., 70-lb., 80-lb., 85-lb. and Angle Bars to lay same
Advantageously located for Southern delivery; also other weights of RELAYING RAILS, in different sections of the country; and NEW STEEL RAILS, all weights. We handle first-class Relaying Rails, and do not select them from scrap. Let us know your requirements. We buy Rails fit to relaying, and pay spot cash.

ROBINSON & ORR Pittsburgh, Pa.
Low Prices on New FROGS and SWITCHES.

RELAYING RAILS

56 to 80-lb. sections, located in different parts of the country, and all equipped with angle bars to fit. Ready for prompt shipment. New or relaying light rails at low prices. New frogs, switches, bolts, spikes, etc.

HYDE BROTHERS STEEL & RAIL CO.
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RELAYING RAILS
20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 80, 85, 90 and 100 lb., all with Fish Plates.

NEW RAILS
8, 12, 16, 20, 25, 30, 35, 40, 45 lb., at manufacturer's prices.
LARGE TONNAGES—Carload and less carload lots, advantageously located for Southern delivery.
Splice Bars for any section rail in stock. Frogs, Switches, Bolts, Nuts, Spikes, and all Track Accessories.
New and Second-hand Pipe, all sizes, with good Threads and Couplings.
Rebuilt Locomotives, Cars and Equipment. All second-hand materials guaranteed. Subject to inspection during loading, or will ship subject to your approval at destination. Attractive prices. Quick Shipment.
Before buying write for our bulletin.
L. B. FOSTER CO., Park Building, Pittsburgh, Pa.

Sweet's Steel Co.
WILLIAMSPORT, PA.

Steel Rails

12, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60-lb. Sections
With Splice Bars, Bolts, Nuts and Spikes.

First Quality Carefully Inspected

Contractor's Equipment
For Sale at a Bargain

36-gauge Locomotives—overhauled—fine shape.
1 10x16 Porter Loco. No. 3489, new fire box.
1 10x16 Baldwin Loco. No. 27997.
3 9x14 Baldwin Locos. Nos. 25801, 24823, 23032.
1 9x14 Porter Loco. No. 3127.

STEAM SHOVEL

1 1 1/4-yd. Vulcan Steam Shovel on M. C. B. trucks, with extra set of traction wheels, steel boom.

HOISTING ENGINES

2 10x12 D. C. S. D. Friction Drum Hoists.
1 10x12 D. C. S. D. Link Motion Hoist.
2 8 1/2x12 D. C. S. D. Link Motion Compound Geared Hoists.
1 7 1/2x10 D. C. S. D. with Boiler.
1 6 1/2x10 D. C. D. Link Motion Friction Drums.
1 6x10 D. C. S. D. with Swinger.
Above material cheap for quick sale, or will lease entire equipment.

L. BRENNER & CO.
LEBANON, PA.

FOR SALE

LOCOMOTIVES, STEAM SHOVELS and RAILS
We have at our shops in Birmingham, thoroughly overhauled, 48 standard and 3 gauge Locomotives.
Also, 10 Marion and Thew Shovels.
Also, 3000 tons of Relaying Rails, all weights. Write us for prices and terms.
Birmingham Rail & Locomotive Co., Birmingham, Ala.

EQUIPMENT FOR SALE

Standard Gauge.
10-34' 60,000 cap. Cars, Steel Trucks, overhauled.
1-8000-gallon; 1-6000-gallon Tank Cars.
1-25-ton Baldwin 4-wheel Switcher.
1-30-ton Baldwin 4-wheel Switcher.

"ZELNICKER" In ST. LOUIS
Other Rare Bargains

FOR SALE
Relaying Steel Rails

About 700 tons, 56 lbs. per yard, with plates.
About 43 tons, 58 lbs. per yard, with plates.
About 600 tons, 60 lbs. per yard, with plates.
About 800 tons, 67 lbs. per yard, with plates.

NEW STEEL RAILS
All Weights
The Steel Rail Supply Co.
2 Rector St. New York, N. Y.

RAILS LOCOMOTIVES

RELAY RAILS
Locomotives—Narrow and Standard Gauge. 150 Locomotives at our shops, 6 to 80 tons. Freight and Passenger Cars.

Largest Stock Locomotives in United States

Southern Iron & Equipment Co.
ATLANTA, GA.

CONCRETE MIXERS

One No. 14 Smith Mixer with steam engine only, mtd. on steel skids, with batch charging hopper, power tilting device, auto. tipping device. Capacity, 46 cu. ft. dry, 31 cu. ft. wet. Strictly first-class condition, just as good as new. In Cincinnati stock. My MONTHLY STOCK LIST contains some exceptional bargains. Write for same.

GEORGE B. CURD Merchants Bldg., Cincinnati, Ohio

TRACTION ENGINE AND ROLLER For Sale

TRACTION ENGINE provided with extra set of ROAD ROLLER wheels, making TEN-TON STEAM ROLLER when desired. Will be sold at a bargain. Can be shown in operation. Call to inspect or write for particulars to

JULIAN SCHOLL CO., 126 Liberty St., New York, N. Y.

Roller For Sale

12-ton 1912 Geiser Double Cylinder Roller, in good condition. Apply at once to

VALLEY TURNPIKE CO., Winchester, Va.

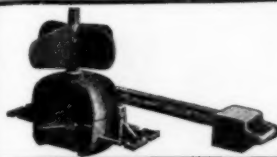
OLIVER DUMP & SPREADER CARS

THE WM. J. OLIVER MFG. CO.

(Dumps by Air or Hand)

Only AIR DUMP CAR under absolute control of operator. Can be brought back to upright position, after passing center of gravity, before entire contents of car have been unloaded. This admits of equal distribution of material on both sides of track. Write.

KNOXVILLE, TENN.



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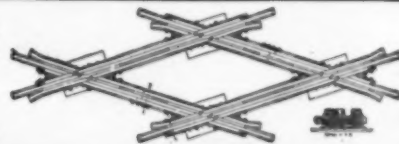
Portable and Industrial Track

THE CINCINNATI FROG & SWITCH COMPANY

Manufacturers

(1)

CINCINNATI, OHIO



WM. WHARTON, JR. & COMPANY, Inc.

Frogs Switches Crossings

Special Work

Guard Rail Clamps

R. C. HOFFMAN & COMPANY, Inc.

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FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50
ways and steel rollers.
One Steel stack, S. S., 6"x100".
One Steel Stack, S. S., 19"x150".

CENTRAL TRANSFER CO.

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FOR SALE

Tandem Paving Roller, in A No. 1
condition. Write

GERBER CONSTRUCTION CO.

Care Manufacturers Record

KILBY FROG & SWITCH CO.

Birmingham, Ala.

New Frogs and Switches for
light sections of rails, in
stock for immediate ship-
ment.Heavier Sections Made to Order
in Quick Time

Priced for Quick Sale

Slightly used Gasoline Engines,
Wheeling Forced Feed Crushers,
Elevators and Pulverizers—

- 1— 9 H. P. Fairbanks-Morse Vertical Engine, with water circulating tank and 18" friction clutch pulley.....\$281.00
- 1—11 H. P. Monitor Gasoline-kerosene engine, mounted on steel beam trucks, complete with 27"x8" clutch pulley, Elkhart magneto, batteries, etc., complete.....\$324.00
- 1—No. 2 Wheeling Crusher, with smooth or corrugated manganese steel jaws, bronze bearings, steel frame, capacity 10 tons ground limestone or 50 tons crushed rock daily, including pulley.....\$292.00
- 1—No. 3 Wheeling Crusher, 9"x15" opening, on skids, manganese jaws, adjustment to 1/2", bronze bearings, steel frame, capacity 100 tons daily.....\$525.00
- 1—No. 1 Bar Hammer Pulverizer, on skids, with pulleys, manganese steel hammers, steel screen, capacity three tons pulverized per hour.....\$410.00
- 1—No. 2 Bar Hammer Pulverizer, manganese steel hammers, manganese grate bars, capacity five tons per hour....\$800.00
- 1—36 ft. chain and bucket elevator, continuous type, Link-Belt make, chain C-132, 16" buckets, capacity 75 tons per hour, with drive pulley.....\$348.00
- 1—12 ft. Wood Frame continuous bucket elevator, 5" or 7" buckets, with drive pulley.....\$88.00

Several belts in lengths varying from 20' in 5-ply rubber to 60' lengths of heavy Balata belting at greatly reduced prices.

The above material has been used in connection with exhibits made at State and County Fairs, or in the case of the pulverizers, elevators and belting was taken in exchange for larger outfits.

First-class condition guaranteed.

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THE WEIR FROG CO.
Manufacturers of
Frogs, Switches, Crossings, Rail Braces, etc.
CINCINNATI, O.

RAILROAD FROGS

Switches, Switch Stands and Rail Braces
CONLEY FROG & SWITCH COMPANY

Manufacturers

MEMPHIS, TENN.

RAILS NEW AND RELAYING RAILS
RAILROAD BRIDGES and EQUIPMENT
HENRY LEVIS & COMPANY
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THE AMERICAN FROG & SWITCH CO., Hamilton, Ohio
Frogs, Switches, Switch Stands, Rail Braces

The Only Up-to-Date
Way to Get Out

CROSS TIES

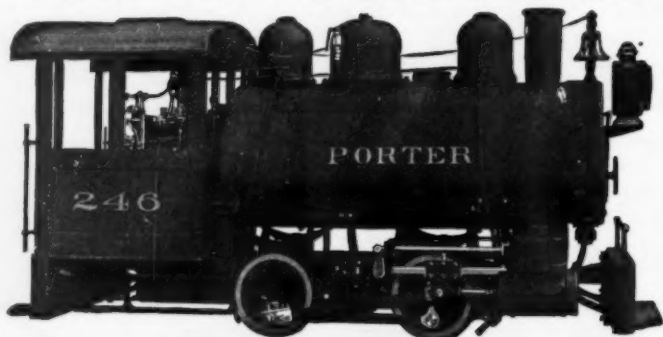
AND SAVE THE WASTE OF STUMPAGE

STANDARD PORTABLE SAW MILLS CO.

NEW ORLEANS, LA.

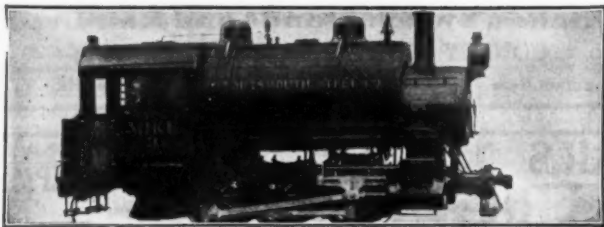
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Made in eight
sizes50 to 5000 tons
per dayPlans and Specifications submitted and
expert advice free on any problems in-
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Austin Manufacturing Co.
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Quarry Cars, Dump Wagons, Stone Spreaders
and Street Cleaning Machinery.

"PORTER LOCOMOTIVES"**STEAM AND COMPRESSED AIR**

For all Gauges of Track and Every Variety of Service, including Mine, Furnace, Lumber, Plantation, Industrial and Contractors' use. Locomotives 30" and 56 1/2" Gauge on Hand for Immediate Delivery.

H. K. PORTER COMPANY 412 Wood St. PITTSBURGH, PA.

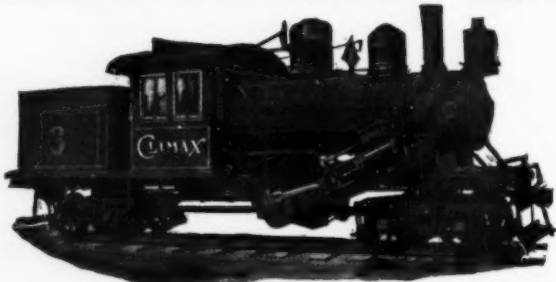
LIMA LOCOMOTIVES**YARD OR CONTRACTORS' ENGINES.**

Six wheels coupled. Power and large distribution of weights, combined suitable for open surface mining. Write for particulars.

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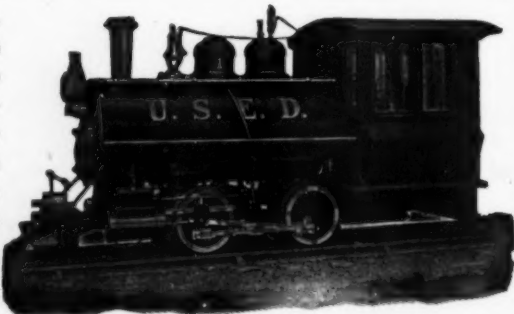
Lima Locomotive Corporation, Lima, Ohio

CLIMAX IMPROVED GEARED LOCOMOTIVES FOR WOOD AND STEEL RAIL**GET CATALOG H**

CLIMAX MANUFACTURING CO. 311 West Main St., CORRY, PA.
C. T. Patterson Co., New Orleans

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Pittsburgh, 405 Oliver Bldg.
Winnipeg, 45 Canadian Life Block.
Vancouver, 175 Cordova Street.
St. Paul, 1308 Pioneer Press Bldg.
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F. H. Hopkins & Co., 286 St. James St., Montreal, Que., Canadian Representative.



DAVENPORT LOCOMOTIVE WORKS
DAVENPORT, IOWA

WATERBURY WIRE ROPE

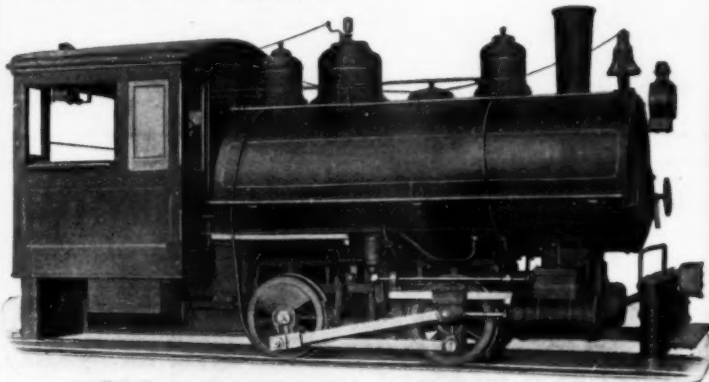
of Standard and Armored Construction. Manila and Sisal Cordage. Fibreclad Wire Rope. We make Ropes for every purpose. Write for prices.

WATERBURY COMPANY

80 South St. NEW YORK
Chicago San Francisco Dallas
Boston New Orleans

**DEPENDABILITY**

is a first essential in a contractor's locomotive. Such an engine must stand up in the most severe service to which a locomotive can be subjected.



The illustration shows a standard Baldwin "dinkie"—an 18-ton engine with heavy frames, a large boiler, ample water and fuel capacity and high-class equipment: **a locomotive that can be depended upon to stay on the job.**

Investigate this engine before you purchase additional power.

The Baldwin Locomotive Works
PHILADELPHIA, PA., U. S. A.

Cable Address, "BALDWIN PHILADELPHIA"

Represented by

Charles Riddell, 625 Railway Exchange, F. W. Weston, 50 Church Street, New
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C. H. Peterson, 1610 Wright Building, George F. Jones, 407 Travelers Building,
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A. Wm. Hinger, 722 Spalding Building, Portland, Ore.

WICKES BROTHERS
MURPHY LITTLE CHAMPION

ROCK DRILLS
FOR
AIR OR STEAM

WICKES BROTHERS

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J. M. Alexander	-	-	Atlanta, Ga.
Moore-Handly Co.	-	-	Birmingham, Ala.
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Smith Drill and Mach'y Co.	-	-	Chattanooga, Tenn.
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We Manufacture Locomotive Cranes Only
OHIO LOCOMOTIVE CRANE COMPANY
BUCYRUS, OHIO

Southern Offices { 94 Home Life Building
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WASHINGTON, D. C.
BIRMINGHAM, ALA.

High Grade Hand-Made Tested

For Cranes, Dredges, Steam Shovels, Conveying, Ships, Railroads, Quarries, Etc.

FORGINGS

Manufactured by

WEIMER CHAIN & IRON CO., Lebanon, Pa., U. S. A.



Type O Thew on Typical Street Grading

The Thew Shovel Is Economical

IN

Shallow cuts encountered in street and road grading, as well as in the deep cuts encountered in digging cellars, sewers, in brick yards, railroad contracting, etc.

The owner of the shovel shown in the cut writes as follows:—

It was very gratifying to us to receive the following telegram from our Superintendent at Greenville, S. C., this morning:

"Shovel moved two-hundred and eighty-five cubic yards in ten hours today. Everything seems to be satisfactory. Cut twelve to eighteen inches. Shall I accept? Wire answer, please."

We have just replied to the above as follows:

"Accept it cheerfully. Sorry they did not show us sooner."

To our minds it would be ridiculous for a contractor to be without a shovel if it will handle two-hundred and eighty-five yards in ten hours on 12 to 18-inch cutting. We enclose herewith our check in accordance with the terms of the contract.

Very truly yours, L. B. West, President,
The West Construction Co., Chattanooga, Tenn.

The Horizontal Crowding Motion, which is a **Patented** and **Distinctive Feature** of **The Thew Shovel**, enables it to handle all classes of material and conditions encountered successfully and economically. Write for catalogue "M" and list of Thew Owners near you.

THE THEW AUTOMATIC SHOVEL CO., Lorain, Ohio

Short Haul at the Cotton Compress

John C. Webb & Sons, of Demopolis, Alabama, have been using for over a year a specially designed tramway for taking up cotton bales from their cotton yard, carrying them over a street and depositing them on the platform of the compress. The loading and the unloading are both automatic. All the hand has to do is to bring the bale to the loading end—the tramway does the rest.

Messrs. Webb & Sons write us:—

"We are unable to express our delight and appreciation of its effective results, quick and convenient delivery. It is the best labor-saving device we ever owned. We consider that we get more value received for the money expended than for anything we ever bought."

If you care to duplicate this experience in your own compress—or in any other industry where baled or bulk goods are to be handled—kindly state your case to us and we will work the problem out for you. Illustrated Bulletins sent on request.



Ambursen Company

Tramway Department

61 Broadway

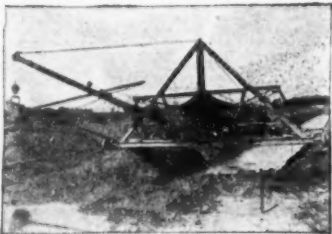
New York

CONTRACTORS—

This Will Interest You

The progressive and successful contractor is always open for more efficient equipment. He wants a machine that will do more work in less time and at less operating and maintenance cost. When you want such a dredge these qualities will be found in

The Bay City Land Dredge



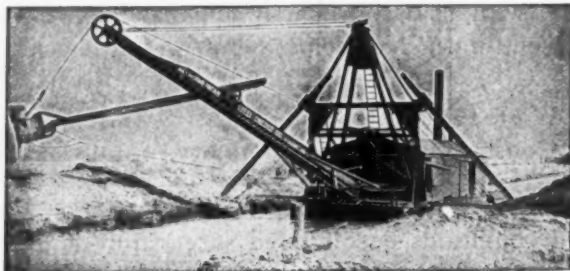
Invaluable for ditching, drainage and irrigation work, both land and water use. Can be dismantled, handled on wagons over country roads, reassembled at small cost and used to advantage on small jobs. Gasoline Engine driven. Operating crew 3 men. If you want a dredge now or in the near future, let us send you full details.

Write today

Bay City Dredge Works

2609 Center Ave. BAY CITY, MICH.

American Steel Dredges



All Sizes. Steel or Wood Hulls. Vertical or Bank Spuds.
Prompt Shipment. Send for New Catalog.

AMERICAN STEEL DREDGE CO.

FT. WAYNE, IND.



MARION Shovels

are BUILT for

ECONOMICAL ROAD CONSTRUCTION

Look at the steady string of wagons in the illustration above.

Doesn't that spell economy? This contractor is keeping his men and teams busy all the time—and not part of the time as with hand labor. And you, too, can do this with a MARION Revolving Shovel. You can keep your men and teams working every minute you are PAYING them. Do you want proof? Then write for Catalog 56, TO-DAY.

The Marion Steam Shovel Co. (Established 1884)

Station H :: Marion, Ohio

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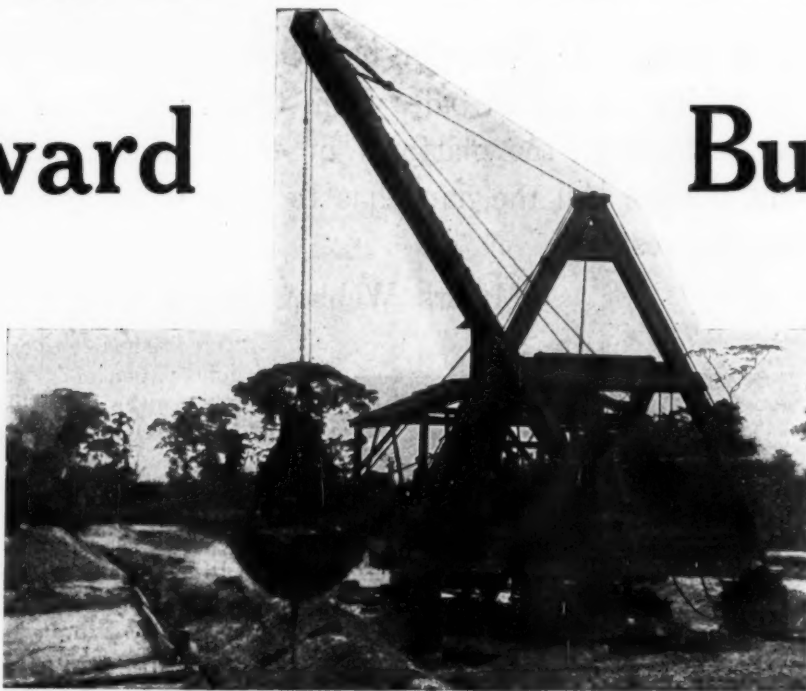
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Digging Sand and Gravel with Hayward Buckets

Sand and gravel to be sold at a profit must be handled at the lowest possible cost, and with Hayward Machinery the cost of handling is reduced to the minimum. If you are digging from gravel pits or stock pile, unloading cars or barges or handling any materials a bucket will dig—at least investigate what we can do for you in the



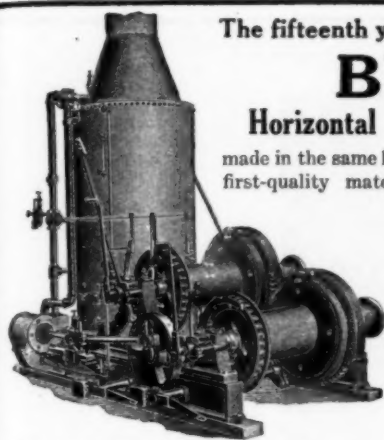
An Orange Peel Bucket operated by a Hayward Machine digging sand and gravel from a pit. But one of the many types are built.

way of cutting down costs—it costs nothing to investigate.

Hayward Buckets are built in sizes to meet every need of the engineer and contractor, from the Dwarfs, which will operate inside of a 10-inch pipe, to the 10-cubic-yard Orange Peel and Clam Shells, used for digging all classes of materials.

THE HAYWARD COMPANY

50 Church St., New York, U. S. A.



The fifteenth year of the

BYERS

Horizontal Type Hoisting Engine

made in the same high-grade way, and of the same first-quality materials as the BYERS Standard vertical type machines.

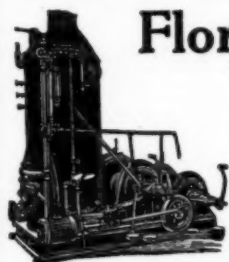
It is hard to improve on correct design, good materials and careful workmanship.

The John F. Byers Machine Co.

Main Office and Works:
Ravenna, Ohio.

Branch Sales Office:
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Makers of Hoisting and Excavating Equipment, Derrick Fittings, Derrick Cars, Material Elevators, Etc.



Flory Hoisting Engine

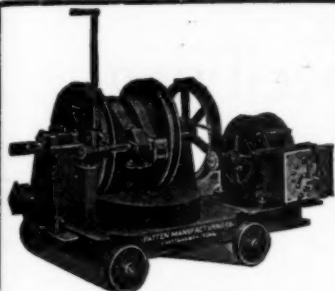
STEAM AND ELECTRIC

For Contractors, Bridge Building, Dredging, Cableways and General Hoisting Duty.

WRITE FOR 1914 CATALOG

S. FLORY MFG. CO.

BANGOR, PA.



Patent Double Platform Hoists

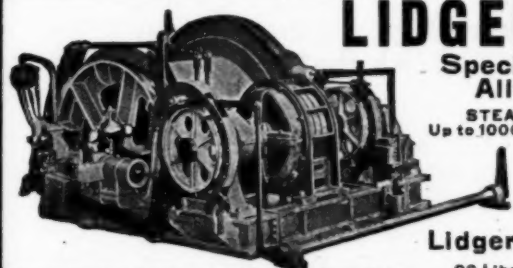
Driven by Electric-Motor, Gasoline or Steam Engine

Single and Double Drum Hoists

PATTEN MFG. CO.

CHATTANOOGA, TENN

Postal Brings Catalogue



LIDGERWOOD

Special Hoists for All Purposes

STEAM Up to 1000 H. P. ELECTRIC Any Size

Many drawings and patterns in stock.

Lidgerwood Mfg. Co.

Electric Haulage Hoist built for E. H. Harriman Estate.

96 Liberty St., New York



HOISTING ENGINES STEAM HAMMERS DERRICKS

For Contractors, Bridge Builders, Dredging, and General Hoisting Duty.

Send for Catalog.

National Hoisting Eng. Co.

HARRISON, N. J.

W. E. AUSTIN CO., Atlanta, Ga., Southern Sales Mgr.



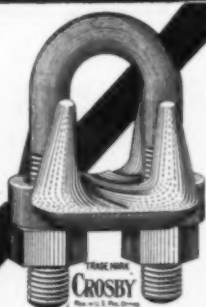
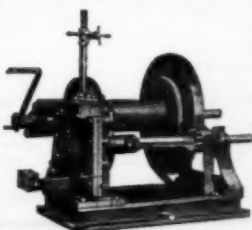
Reversing Air or Steam Motor
(1/2 to 30 H. P.)

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Special and Stationary Engines, Pneumatic Hoists, Hoisting Engines, Swinging Engines, Motor Crabs, Drill Hoists, Spud Hoists, etc.

Dake Engine Co.

Grand Haven, Mich.



For Safety's

Sake use

"Crosby" Clips

The "CROSBY" Clip is a safety device and the value of a safety device is measured, not by its cost, but by what it will do. Three "CROSBY" Clips correctly put on will absolutely HOLD loads much in excess of the breaking strain of any rope.

The "CROSBY" Clip is drop forged from special analysis steel. Its powerful "U" bolt and massive curved, grooved base have tremendous gripping power. It cannot rust—it's galvanized.

A size for every rope.

AMERICAN HOIST & DERRICK CO.

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Chicago
Calgary
Portland
New York

Edmonton
Spokane
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Denver
Pittsburgh
San Francisco

Vancouver
Winnipeg
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Seattle



Up Against the Bank

The American Steam Shovel is just the shovel to finish your contract quickly and profitably. Simply designed and strongly built.

New catalog. Send for a copy.

The American Clay Machinery Co.
BUCYRUS, O.

Monighan Drag Line Excavators

STEAM AND GASOLINE POWER



The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 feet long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

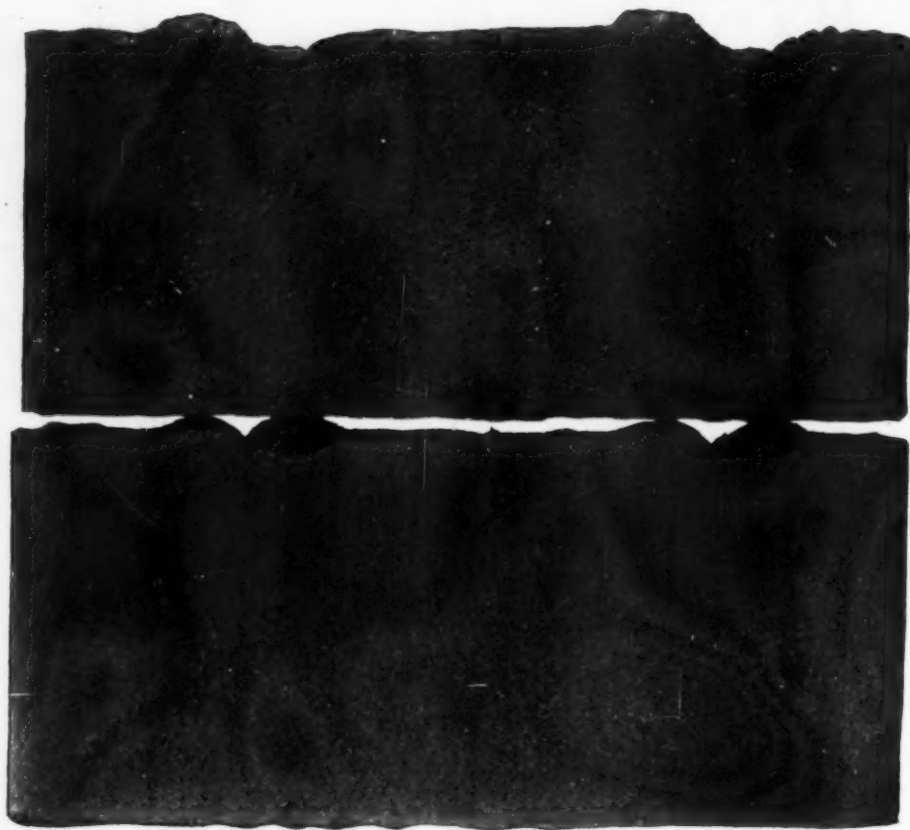
We build excavators with booms from 40 to 125 ft. long and buckets from one to three cubic yard capacities.

Write for Excavator Catalog

MONIGHAN MACHINE CO., 2022 Carroll Ave., CHICAGO

Agent—P. B. ENGH

341 Pacific Electric Bldg., Los Angeles, Cal.
704 Hooker & Lent Bldg., San Francisco, Cal.
Everett Bradt & Wright, Houston, Tex.
Everett Bradt & Wright, Dallas, Tex.



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DUNN Wire-Cut-Lug BRICK

Here is the whole story in a nutshell.

The **more uniform the lug** and the size of a paving brick, the less effort required to handle; the more square yards of pavement can be laid in a day; and the easier it is to make good joints.

When you specify **repressed** brick you get brick with many lugs malformed, sometimes missing altogether. Your labor cost is high.

When you specify WIRE-CUT-LUG

brick, you get brick with perfect lugs and depressions, accurately spaced, entirely formed. **You get brick that reduce the labor cost.**

And Wire-Cut-Lug brick do more than that. Their roughened bonding surfaces, their square cut edges, their **greater density**, are factors that reduce the **maintenance cost** of the finished roadway.

The independent, competing licensees listed below can supply you.

Dunn Wire-Cut-Lug Brick Company

CONNEAUT, OHIO

LICENSEES:

Corry Brick & Tile Company, Corry, Pa.
One plant at Corry, Pa.
United Brick Company, Greensburg, Pa.
One plant at Conneaut, Ohio.
Sterling Brick Company, Olean, N. Y.
One plant at Olean, N. Y.
Reynoldsville Brick & Tile Company, Reynoldsville, Pa.
One plant at Reynoldsville, Pa.
Danville Brick Company, Danville, Ill.
One plant at Danville, Ill.
Clinton Paving Brick Co., Clinton, Ind.
One plant at Clinton, Ind.
Alton Brick Company, Alton, Ill.
One plant at Alton, Ill.
Deckman-Duty Brick Co., Cleveland, Ohio.
One plant at Cleveland, Ohio.
One plant at Carrollton, Ohio.
One plant at Malvern, Ohio.

Tuna Valley Pressed Brick Co., Bradford, Pa.
One plant at Bradford, Pa.
Foster Paving Block Co., Bradford, Pa.
One plant at Bradford, Pa.
One plant at Youngsville, Pa.
One plant at Binghamton, N. Y.
Metropolitan Paving Brick Co., Canton, Ohio.
Four plants at Canton, Ohio.
One plant at Willow, Ohio.
Bessemer Limestone Co., Youngstown, Ohio.
Three plants at Bessemer, Pa.
Peebles Paving Brick Co., Portsmouth, Ohio.
Two plants at Portsmouth, Ohio.
One plant at Firebrick, Ky.
The Murphysboro Paving Brick Co., Murphysboro, Ill.

Southern Clay Mfg. Co., Chattanooga, Tenn.
One plant at Robbins, Tenn.
One plant at Coaldale, Ala.
McAvoy Vitrified Brick Co., Philadelphia, Pa.
One plant at Perkiomen Junction, Pa.
Windsor Brick Company, Akron, Ohio.
One plant at Akron, Ohio.
Hocking Valley Brick Co., Columbus, Ohio.
One plant at Logan, Ohio.
Veederburg Paver Co., Veederburg, Ind.
One plant at Veederburg, Ind.
Springfield Paving Brick Co., Springfield, Ill.
One plant at Springfield, Ill.
Terre Haute Vitrified Brick Co., Terre Haute, Ind.
One plant at Terre Haute, Ind.
Albion Vitrified Brick Co., Albion, Ill.
Alliance Clay Products Co., Alliance, Ohio.
Westport Paving Brick Co., Baltimore, Md.
Plant at Westport, Baltimore.

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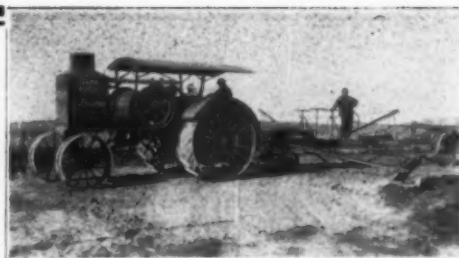
WIRE CUT LUG AND DUNN PATENT
REPRESS

Southern Clay Manufacturing Co.
CHATTANOOGA, TENN.

Three Plants Capacity, 30,000,000

Road Grading

requires the power and durability of this Tractor.



There is also a big saving with a

Fairbanks-Morse Oil Tractor

because it operates perfectly on low-grade oils—allowing the use of the easiest obtained.

932-64F

Fairbanks, Morse & Co.

ATLANTA
JACKSONVILLE
NEW ORLEANS

For the Hardest Kind of Continuous Work

Where the machinery must stand constant strain, investigate the Galion Ideal Giant All-Steel Reversible Engine Grader. For use with either power, roller or tractor.



Under absolute control of one man always. Especially noted for its economy and efficiency. Used with great success by many prominent contractors for years. Catalog on request.

The Galion Iron Works & Manufacturing Co.
117-119 E. Main Street GALION, OHIO

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112-14 S. Front St., Memphis, Tenn. 403 Trust Bldg., Durham, N. C.
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A Light, General Utility Steam Shovel for Contractors' Use



The cut shows machine with Skimmer Scoop for street grading and road work. It will dig a crust that would otherwise have to be broken by a roofer. Leaves a flat, finished surface for paving. Operated by two men. Capacity 150 to 300 wagon-loads in ten hours.

KEYSTONE Traction Excavator

This portable machine can be used with three kinds of scoops—adapting it to practically every grading and excavating job in the contracting field; the Skimmer Scoop for street grading; the Dipper Scoop for side hill embankments; the Ditcher Scoop for trenches, irrigation ditches, etc.

It is light—only 8 tons; portable—moving on its own power anywhere a dump wagon can go, and it is readily loaded on a freight car for shipment.

It saves both in first cost and operation over the heavier types of steam shovels. The price is surprisingly low.

We have photos of the Keystone on jobs similar to yours. Write for them and for descriptive matter.

KEYSTONE DRILL & EQUIPMENT COMPANY, Beaver Falls, Pa.
170 Broadway, New York; Monadnock Block, Chicago; Carthage, Mo.



CATERPILLAR
Big U.S. Fuel Oil

Handling a big Austin-Western elevating grader at Mission, Texas—plenty of power.

Road Jobs Pay

Road jobs pay if you can work right along without stopping. This is where it pays to buy a Caterpillar to begin with, instead of waiting until you have tried all the "cheaper" engines.

Weather doesn't tie up the Caterpillar—neither do bad roads. It is earning money, rain or shine, summer or winter.

And it outlasts all those that apparently cost less. It's the cheapest in the end—less delay, fewer repairs, greater net profit.

Short-turning, good clearance, two speeds if wanted, handy reverse, easy steering, no damage to sub-grade, durable construction—these are things that make the Caterpillar work pay.

Get our new contractors' book, No. CG 75—full of stories by successful Caterpillar Users.

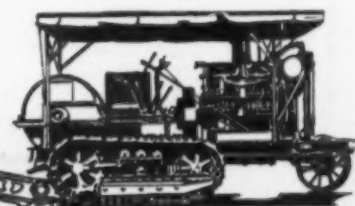
The Holt Mfg. Co., Inc.

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Houston, Texas

50 Church St., New York

Send for
Bulletin
CG 75



Rocmac Roads

TRADE MARK REGISTERED

Superiority of Rocmac Method

Simplicity of construction—low first cost—minimum upkeep expense—extreme wear-resisting quality; these specific points of advantage identify the Rocmac Road. It is a scientific answer to the problem of durable highway building. It is a demonstrated, practical method in advance of any other system. Rocmac Roads are odorless, clean and sanitary. They never crack, and are waterproof, frostproof, wearproof.

Convenience of Distributing Points

The establishment of manufacturing and distributing plants in ten states has added tremendously to the promptness of Rocmac service. The complete co-operation of these plants results in a great saving of time and freight charges to our customers.

Completeness of Rocmac Service

The technical advice of our engineers and road experts is free to customers at all times. If your locality has peculiar problems and difficulties confer with us. We shall be pleased to co-operate with you and to give our best thought and advice as to a practical solution of your trouble.

Correspondence addressed to any of the following United States or Canadian manufacturers and distributors will receive prompt attention.

Rocmac Road Corporation of America

Lafayette Bldg.

Philadelphia, Pa.

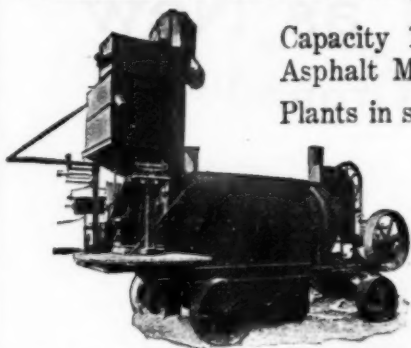
United States Manufacturers and Distributors:

Philadelphia Quartz Company, 121 So. 3rd St., Philadelphia, Pa.
Frohman Chemical Company, Sandusky, Ohio.
Mechling Bros. Mfg. Company, Camden, N. J.

Canadian Manufacturers and Distributors:

Rocmac Roads, Ltd., 74 King St., East, Toronto, Ontario
Rocmac Road Syndicate, care Turner, Beaton & Co., Victoria, B. C.
Rocmac (Quebec) Ltd., 312 Board of Trade Bldg., Montreal.
Rocmac Road Corp. of America, Thorold, Ontario.

Cummer Road Asphalt Plant

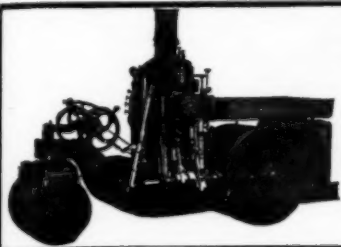


Capacity 1000 yds. 2" top or Asphalt Macadam per day.
Plants in stock.

Make test before buying.

Cummer one-car 2000-yard capacity plants in stock.

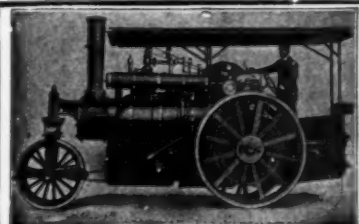
THE F. D. CUMMER & SON CO. CLEVELAND, O.



Get "ERIE" ROLLERS

for LONG SERVICE
and BEST RESULTS

ERIE MACHINE SHOPS
ERIE, PENNA.



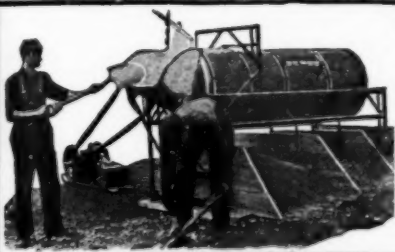
ROAD ROLLERS

ALL TYPES ALL SIZES
Steam and Gasoline

The Kelly-Springfield
Road Roller Co.

SPRINGFIELD OHIO

GET CATALOG



Converse Rotary Screen

Hand or Power
For Sand, Gravel, Crushed
Stone, Etc.

In one operation separates any granular mixture into various sizes. A big saving for contractors. Operated by one or two men. May be drawn along ordinary country roads. Stands hard continuous usage.

Full particulars upon request.

F. S. CONVERSE CO., Inc.
LESTERSHIRE, N. Y.

BALD MOUNTAIN QUARRY PAUL & CORNELL CO. Newsom, Davidson Co., N. C. CRUSHED STONE

(The Hardest Rhyolite)

FOR BALLAST, CONCRETE, MACADAM, ETC.

Large Output—Prompt Shipments.

Ask for Quotations

HIGH- GRADE PAVING BRICK

COPELAND-INGLIS SHALE BRICK CO., MFRS.

Office—610 First Nat. Bank Bldg.

Birmingham, Ala.

HIGH GRADE PAVING BRICK

BEST TESTERS AND MOST DURABLE

THE CARLYLE PAVING BRICK CO., PORTSMOUTH, O.

Adamantine Clay Products Co.

Manufacturers of

PAVING, FACE and COMMON
BUILDING BRICK

NORTH MOUNTAIN, W. VA.

CRUSHED LIMESTONE

In any quantities. Deliveries to points in the Carolinas, Georgia, Florida, Alabama and Tennessee. Prompt shipments our specialty.

Chickamauga Quarry & Construction Co.
Chattanooga, Tenn.

AMERICAN INGOT IRON "ARMCO" CULVERTS

99.84% PURE IRON

Demand

Triangle Brand on Every Sheet
This Triangle Trade-Mark is
YOUR PROTECTION

TENNESSEE METAL CULVERT CO.
Nashville, Tenn.



Aztec Asphalt is by every essential test a superior asphalt for paving streets and roads.

Its increasing adoption for heavy traffic pavements is due to a high standard of quality uniformly maintained.

AZTEC ASPHALT

is being used by leading cities, towns and counties in all parts of the country for sheet asphalt, asphaltic concrete, asphaltic macadam (mixed method) and asphaltic macadam (penetration method).

It is highly endorsed by asphalt experts, highway officials, engineers and contractors.

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East Point Road, Fulton County, Georgia, paved with
Standard Asphalt Binder "C."

STANDARD

ASPHALT
BINDER "C"

Write for booklet and prices.

STANDARD OIL COMPANY

(NEW JERSEY)

Newark, N. J.

Baltimore Md.

Pure Iron Nails as Good as New After a Hundred Years in the Ground



AFFIDAVIT.

State of Ohio }
County of Butler } ss.

James A. Applegate, being first duly sworn, deposes and says that he is a resident of Middletown, State of Ohio, County of Butler, and that he is entitled to the custody of iron and steel. Affiant further deposes and says that the nails, described in affidavit by Hawkins Clear under date of September 22, 1924, and photographed under No. 1597, were submitted for chemical analysis. Affiant further deposes and says that the several nails were carefully cleaned and analyzed and the combined results were analyzed with the following results:

Phosphorus	.007
Manganese	.100
Carbon	.000
Silicon	.000
Copper	Trace
Iron	.993
By difference	99.83%

Affiant further deposes and says that all of the above is within his personal knowledge and the facts as stated are true.

James A. Applegate
Notary Public.

SWORN to and subscribed before me this 27th day of September, A.D. 1924.



Hawkins Clear



Nails Taken from Grave

AFFIDAVIT.

State of Ohio }
County of Franklin } ss.

Hawkins Clear, being first duly sworn, deposes and says that he is a resident of Eaton, Ohio, County of Franklin, and that he is assistant to the Sexton of the Mount Hill Cemetery. Affiant deposes and says that Robert Jelling, the largest soldier buried in Port St. Clair Cemetery, who is described as having been 6 feet and 4 inches in height, was buried November 6, 1797, and disinterred November 3, 1897. The said Robert Jelling had therefore been buried for 100 years.

Affiant is made test owing to the size of Robert Jelling the records are authentic.

Affiant also deposes and says that on November 3, 1897, when Robert Jelling was disinterred, several nails were taken from the box in which the casket had rested, the said nails having been in deposit's possession from November 3, 1797, until handed to a representative of the American Rolling Mill Company.

Affiant further deposes and says that the photograph, number 1597, showing four nails, truly represents the nails in his possession for the above stated period.

Affiant further states that all of the above facts are within his personal knowledge and that the above statements are true.

Hawkins Clear
Notary Public.

SWORN to and subscribed before me this 24th day of September, A.D. 1924.

The photographs and affidavits tell the story of the wonderful rust-resistance of pure iron. These old hand-made nails were of iron 99.83% pure. For a century they have lain in the earth, under conditions which would bring about the rapid corrosion of any less resistant material. The most rigid analysis discloses

hardly more than a trace of Manganese, Sulphur and Copper, and it is undoubtedly due to the practical exclusion of these substances that the nails when unearthed were as strong and serviceable as when first made.

ARMCO AMERICAN INGOT IRON CULVERTS

will give immensely long service, because their material is even purer than that of these wonderful old nails. Every sheet or plate is guaranteed at least 99.84% pure iron, and the average of actual

analyses shows a purity of 99.87% to 99.88%. Its durability in exposed situations is amply verified by the experience of hundreds of users.

Write the nearest manufacturer for particulars and prices on Armco Iron Culverts, Siphons, Sheet Roofing and Formed Products

Arkansas, Little Rock
Dixie Culvert & Metal Co.
California, Los Angeles
California Cor. Culvert Co.
California, West Berkeley
California Cor. Culvert Co.
Colorado, Denver
R. Hardesty Mfg. Co.
Delaware, Clayton
Delaware Metal Culvert Co.
Florida, Jacksonville
Dixie Culvert & Metal Co.
Georgia, Atlanta
Dixie Culvert & Metal Co.
Illinois, Bloomington
Illinois Corrugated Metal Co.
Indiana, Crawfordsville
W. Q. O'Neill Co.
Iowa, Des Moines
Iowa Pure Iron Culvert Co.
Iowa, Independence
Independence Culvert Co.

Kansas, Topeka
The Road Supply & Metal Co.
Kentucky, Louisville
Kentucky Culvert Co.
Louisiana, New Orleans
Dixie Culvert & Metal Co.
Maryland, Havre de Grace
Spencer, J. N.
Massachusetts, Palmer
New England Metal Cul. Co.
Michigan, Bark River
Bark River Bridge & Cul. Co.
Michigan, Lansing
Michigan Bridge & Pipe Co.
Minnesota, Minneapolis
Lyle Corrugated Culvert Co.
Minnesota, Lyle
Lyle Corrugated Culvert Co.
Missouri, Moberly
Corrugated Culvert Co.
Montana, Missoula
Montana Culvert Co.

Nebraska, Lincoln
Lee-Arnett Co.
Nebraska, Wahoo
Nebraska Culvert & Mfg. Co.
Nevada, Reno
Nevada Metal Mfg. Co.
New Hampshire, Nashua
North East Metal Cul. Co.
New Jersey, Flemington
Pennsylvania Metal Cul. Co.
New York, Auburn
Pennsylvania Metal Cul. Co.
North Carolina, Greensboro
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Culvert Makers

have unusual conditions to contend with—conditions that are strangely unlike in different localities.

PORTSMOUTH IRON

"Like a stone wall to rust and corrosion"

Is being adopted by many of the largest manufacturers of culverts because it comes well within the specifications of highway engineers. Also, they have found that culverts made of Portsmouth Iron are business boosters.

Write for new illustrated booklet, just issued.

Portsmouth Steel Co.

General Offices & Works Portsmouth, N.H. Executive Offices Wheeling, W. Va.

THERE ARE MORE HARRY'S RED "H" BRAND

Corrugated Metal Culverts

in use in the Southern States today than any other kind, and the reasons are obvious.

We have been in business longer than any other Culvert concern in existence.

We are not confined to any one State or District.

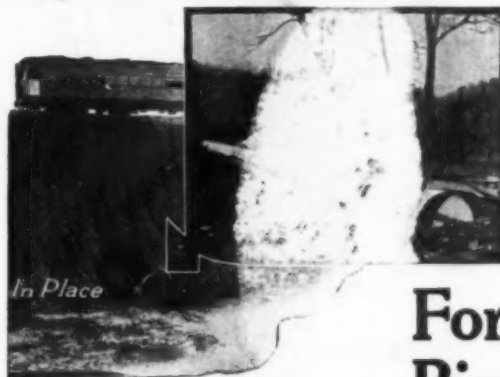
Our business methods are absolutely fair and honest.

And our best efforts are given to improving our Culverts and keeping them just a little ahead of the other fellow's.

A Brand New Catalog just off the press.

HARRY BROS. CO., Inc.

NEW ORLEANS, LA.



For the Big Fill

you want culvert PERMANENCY

It's wasteful expense to have to replace a metal Culvert that has sagged, settled or corroded out.

"ACME" (NESTABLE)

NO-CO-RO Metal Corrugated Culverts

do NOT sag or settle when properly installed. Witness this 48", 120 foot long "ACME" under this 37 ft. bank on an Iowa Electric Interurban Railway. "In excellent condition," writes the superintendent, *after years of service*. This installation is only one from hundreds we can show. Actual service is what counts. "ACMES" are the culverts of real service! And Catalog G-9 tells their story. Tells about their NO-CO-RO Metal and their NESTABILITY. Do you KNOW?

For quotations for delivery in North and South Carolina, address—
THE CAROLINA METAL PRODUCTS COMPANY, Manufacturers in Wilmington, N.C.

For quotations for delivery in Virginia, West Virginia and Maryland, address—
DOMINION METAL PRODUCTS CORPORATION, Manufacturers in Roanoke, Va.

For quotations for delivery in Florida and Georgia, address—
THE FLORIDA METAL PRODUCTS COMPANY, Manufacturers in Jacksonville, Fla.

THE CANTON CULVERT & SILO CO.
MANUFACTURERS
CANTON, OHIO, U.S.A.



If you are contemplating installing a culvert that will last for years to come, buy our

**American Ingot Iron
Culverts**

We also highly recommend our

Lennon's Smooth Metal Flume and K. T. Water Gates

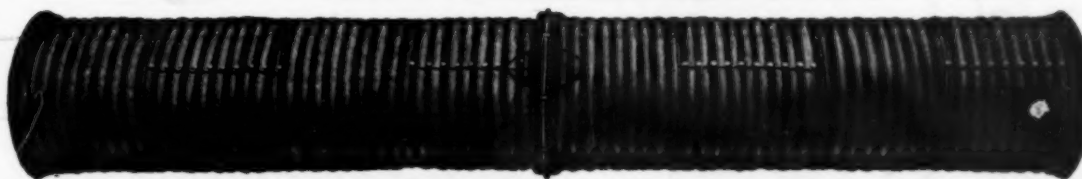
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Lone Star Culvert Company
HOUSTON, TEXAS

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QUALITY OF MATERIAL USED IS THE FINEST AND PUREST KNOWN
CONSTRUCTED BY EXPERIENCED WORKMEN ALONG MODERN LINES
FOR WEAR. RESULT—

BEST CULVERT ON EARTH



SALISBURY METAL CULVERT COMPANY

SALISBURY, N. C.

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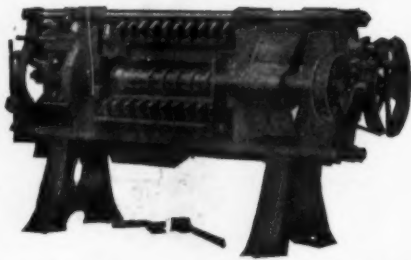
COTTON SEED OIL MILLS

are not installing the ANDERSON OIL EXPELLER without good reason. It makes better oil and better cake at less cost than other machinery. Works whole seed or meats only. Let us explain.

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Machinery

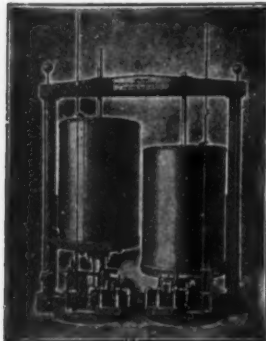
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Textile Machinery

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**Cottonseed Oil Machinery**
Linseed Oil Machinery

Hydraulic Presses
Hydraulic Pumps
Cake Formers Meal Cookers
Hulling and Cleaning Machinery

Complete Equipment Latest and Best Improvements

Buckeye Iron & Brass Works

DAYTON, OHIO, U. S. A.

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Cotton Oil Mills

Conveyors, Chains, Gears, Sprockets,
Buckets, Bearings, Automatic Scales, Etc.

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Deverell, Spencer & Co.
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THE MURRAY COMPANY

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ATLANTA, GA., U. S. A.

ENGINEERS AND BUILDERS

COMPLETE MODERN OIL MILL EQUIPMENT

Pneumatic Seed Cleaners.
Automatic Linters.
Ball Bearing Automatic Hullers.
Steel Frame Shakers.
Steel Frame Hull Beaters.
Crushing Rolls.
Mechanical Cookers.
Automatic Steam Cake Formers.
All Steel Hydraulic Presses.
Power Hydraulic Pumps.

Everything for an Oil Mill.

Write Us for Estimates and Descriptive Matter

Cotton Ginning
Machinery

For all requirements of Ginners and Growers. Write to nearest Continental Sales Office for Catalogue H.

Continental Gin Co.

Atlanta, Ga., Birmingham, Ala., Dallas, Tex.,
Memphis, Tenn., Charlotte, N. C.

Special Hydraulic Presses

DESIGNED TO MEET REQUIREMENTS

WE MANUFACTURE A FULL LINE OF COTTON SEED OIL MACHINERY
ACCUMULATORS, AIR AND HYDRAULIC. FULL LINE OF SMOK-
ING AND PLUG TOBACCO MACHINERY

THE CARDWELL MACHINE CO., Richmond, Va., U. S. A.

Complete Line of Improved

Cotton Seed Oil Mill Machinery

Everything Necessary for the Press Room. Write us for Prices and Descriptive Circulars.

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REPRESENTATIVES { Mr. PAUL WATSON, Galveston, Texas.
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The American Cotton Oil Co.

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CABLE ADDRESS:
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COTTONSEED { **OIL**
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STEARINE

A SUPERIOR OIL for salad dressings and table use, as well as for general cooking. It is absolutely pure and as wholesome as the best Olive Oil and costs only about one-quarter as much.

Made at Refineries in

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NEW ORLEANS

CINCINNATI

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City Water-Works System,
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**We Specialize in the
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ELEVATED STEEL TANKS
AND STAND PIPES**

for Municipal, Railroad and Factory Service. We also build oil tanks, cooling stations, bridges, turn tables, buildings and structural material.

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OFFICES: Charlotte, N. C., Room 501-3 Realty Bldg.
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SHOPS: Chicago, Ill.; Greenville, Pa. (Pittsburgh District);
Bridgeburg, Ont., Can.



City Water-Works, Plant City, Fla.

**"The Tanks with a Reputation"
WHEN YOU BUY A
CALDWELL TANK
and TOWER**

you get something that represents more than an assembling of mere materials. You get an outfit that combines the skill of expert workmen, the most approved mechanical principles, the best engineering knowledge and 25 years' experience. Such an outfit has a durability years of use do not affect and a stability that the fiercest gale does not phase. We can refer you to many plants having these outfits in your neighborhood, which are doing their whole duty all the time.

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LOUISVILLE, KY.

Tanks { Steel-Wood } Towers
Galvanized
Wind Mills—Pumps—Gas Engines



LOWELLVILLE, OHIO
Capacity 80,000 gals.
Height 119 ft.

Elevated Steel Tanks

Hemispherical and Segmental Bottoms

**Manufactured at Pittsburgh, Pa.
Erected Anywhere**

We have special designs for Municipal, Railway and Industrial service.

Catalog No. 3 sent upon request.

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Are you interested in machinery of any kind? If so, write the undersigned:

We are Southern Manufacturers and Make our own Engines and Boilers and guarantee them; when you deal with us you get the benefit of over 50 years experience.

Our Engines and Boilers are now in use in many of the Gineries, Oil Mills, Saw Mills and other manufacturing enterprises throughout the Southern States and Middle West.

We also make a specialty of

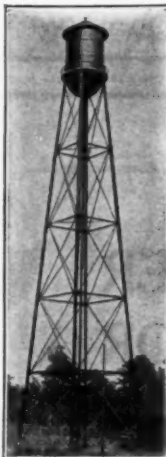
**TANKS, TANKS AND TOWERS, SMOKE STACKS
AND ALL KINDS OF BOILER WORK**

We make Cane Mills and Syrup Kettles, Pulleys, Castings, etc. Write us for prices on our Plantation Pumping Outfits, Saw Mills, Shingle Mills, Planers and Matchers, and Wood Splitters. Write at once, advising your wants. Also carry large stock Mill Supplies, Pipe, Roofing, Belting, Fittings, etc.

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STANDPIPES
STEEL RIVETED PIPE**

**Tanks Anywhere for
Any Service**

If Made of Steel We Make It

Structural Steel Work

**Chattanooga Boiler & Tank Co.
CHATTANOOGA, TENN.**



ELEVATED STEEL

**TANKS
TOWERS**

Mechanically Correct in Design and Workmanship
Any Size. Erected Anywhere

Structural Iron Work Stand Pipes Boilers

R. D. COLE MFG. CO. NEWNAN, GA.

**"THE STANDARD" SCALES
"THE SCALES STANDARD"**

The standard of high-grade construction, accuracy, reliability, strength, durability and price. Capacity 1-16 oz. to 200 tons. Write for catalog No. 16.

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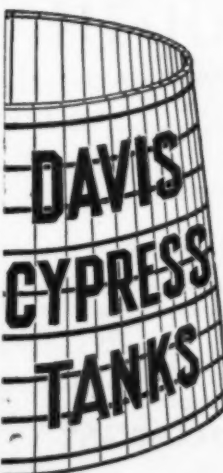


Insane Hospital,
Nevada, Missouri

**TANKS TOWERS
STEEL STORAGE TANKS
PLATE WORK
Structural Steel Work**

Plans and Estimates Furnished on Application

**MEMPHIS STEEL
CONSTRUCTION COMPANY
Memphis, Tenn.**



"Can't Leak and Won't Warp"

A Davismade Tank

is the combination of Cypress of the highest grade and twenty-five years' experience in our special line.

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LIGHT FOR YOUR NIGHT SHIFT

Milburn Portable Acetylene Lights—100 to 20,000 Candle-power.
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ALEXANDER N. MILBURN CO. BALTIMORE, MD.

OPPORTUNITIES IN THE SOUTH

— FOR —

Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material unbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

THE WEST POINT ROUTE

Atlanta & West Point Railroad

THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for

Truck, Fruit, Stock and General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities
Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.

Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the
Illinois Central Railroad

ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA
IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI
FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or Investment should have a copy of one or all of these books. For free copies address

J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

To the

MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

Central of Georgia Railway

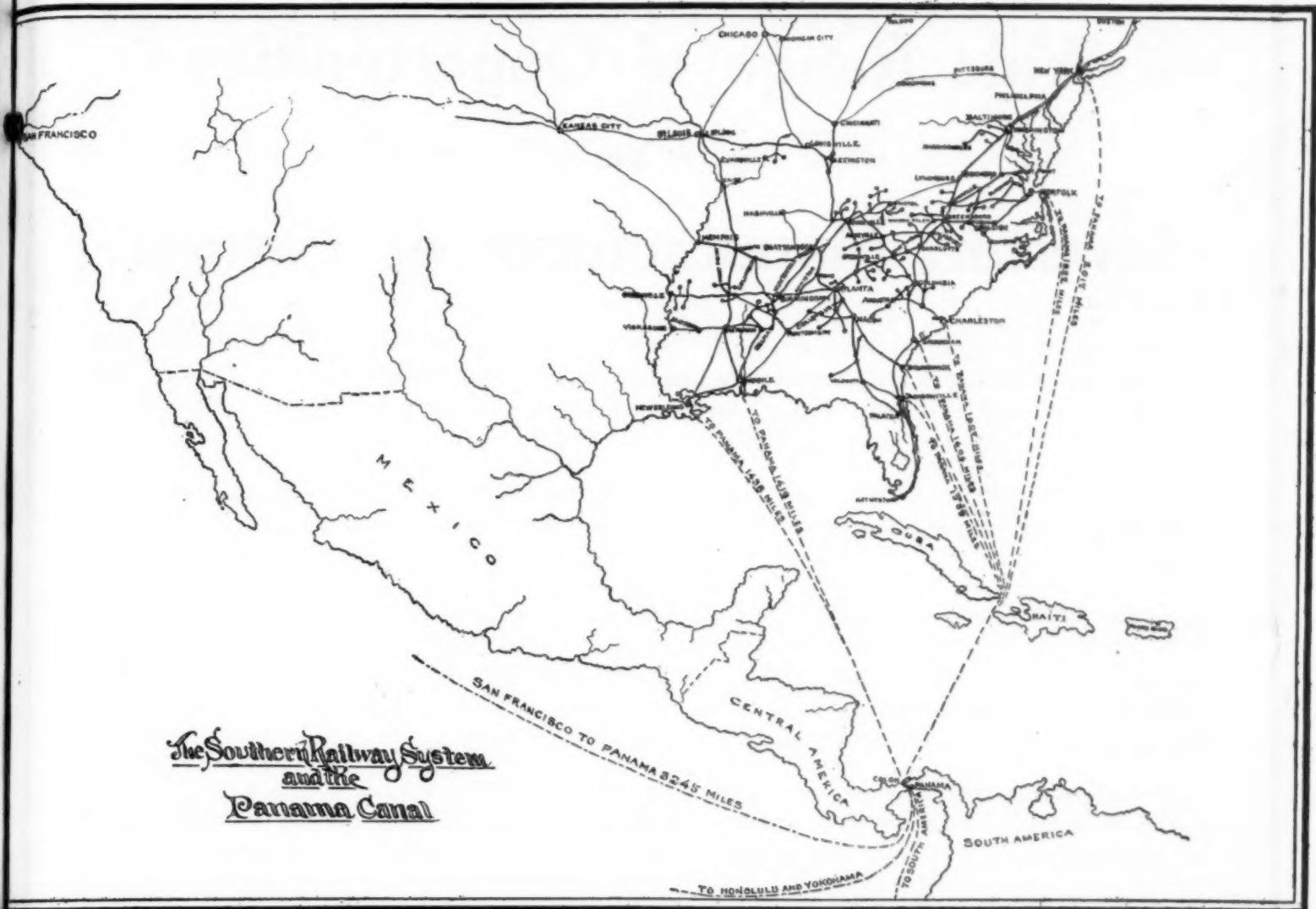
Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing ware-houses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, Industrial Agent
SAVANNAH, GEORGIA

The Map Tells the Story



Get Closer to South American Trade

Locate your factory amid the South's great supplies of raw materials—Cotton, Timber, Iron, Steel, Clays and Earths—where practically inexhaustible Coal supplies are convenient and cheap, where hydro-electric developments have made available more than a million horse-power, and where reliable labor is plentiful at reasonable wages.

The South American Agent of Southern Railway Company will help you find markets for your products in Central and South America.

If you want to reduce your manufacturing costs, establish a distributing warehouse, or locate in America's most charming home section, let us have an industrial agent call on you and tell you, free of cost, about the advantages of the South and Southern Railway service.

Virginia	Alabama
North Carolina	Mississippi
South Carolina	Tennessee
Georgia	Kentucky
Florida	Southern Indiana
Southern Illinois	

M. V. RICHARDS
Industrial and Agricultural Commissioner
Room 52 Washington, D. C.

Southern Railway
Mobile & Ohio Railroad
Georgia Southern & Fla. Ry.
Virginia & Southwestern Ry.
Southern Ry. in Mississippi

Wide Range of Opportunities

for the

Investor, Manufacturer or Farmer

The section of the country through which the Carolina, Clinchfield & Ohio Railroad runs presents opportunities for manufacturing and other industrial enterprises so vast and varied in proportions and in form that the man who visits it for the first time is certain to be astounded at the unsuspected possibilities uncovered to his view.

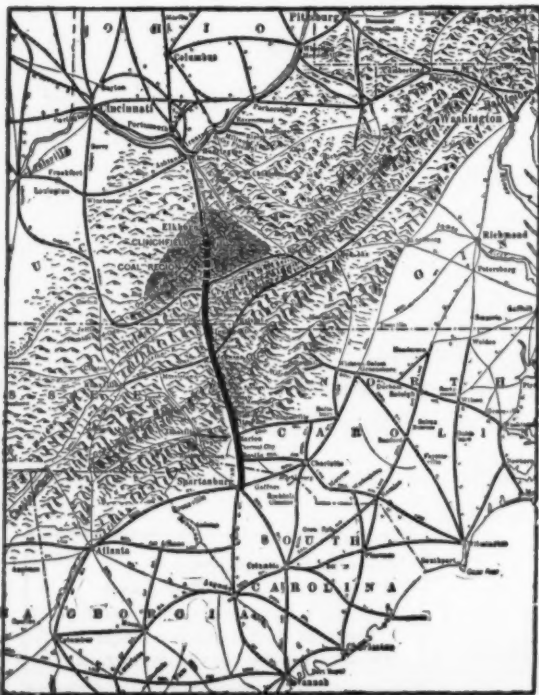
In mining there is coal, iron, feldspar, kaolin, barytes, limestone, and a number of other minerals of greater or less importance, and all in such quantities as to create a promising field for profit.

In timber there are all the hardwoods that grow in the United States and many of the soft variety that are becoming very scarce in other parts of the country. There are opportunities for profit in saw mills, planing mills, wagon factories, sash, door and blind mills, handle, spoke and hub factories, furniture factories, chair factories—in short, in all kinds of factories that make use of any of the many kinds of wood to be found there.

In cotton manufacturing there are many opportunities, for in no other section can the raw cotton be brought so cheaply into touch with cheap coal, an abundance of water power, and an unlimited amount of high-class native labor.

For agriculture all kinds of staple crops—grains, grasses—grow prolifically, while cabbage, potatoes, beans and other vegetables produce most abundantly. Apples and peaches here reach their highest state of perfection, and the orchard is destined to become the most profitable portion of the farm.

Cattle raising is found to be profitable wherever tried, and some of the finest horses and mules grown in the country have been bred and matured in this general section.



Write for our booklet, "The Land of Opportunities," and you will find further particulars concerning the things mentioned here.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

West Virginia's Resources

For Iron and Steel Industries

A careful canvass of plants in West Virginia on the B. & O. Railroad, or near it, which make iron and steel articles, shows 46 such plants, located as follows:

Wheeling, 15	Morgantown, 2	Weston, 1	Shinnston, 1
Parkersburg, 12	Sistersville, 2	Spencer, 1	Paden City, 1
Huntington, 3	Charles Town, 1	Cameron, 1	Wolf Summit, 1
Fairmont, 2	Point Pleasant, 1	Grafton, 1	New Martinsville, 1

The output of these plants embraces 25 distinct products, as follows:

Axles	Boilers	Gas Pumps	Brass Fittings
Nails	Castings	Sheet Iron	Structural Iron
Rails	Forgings	Steel Plates	Iron Drip Pans
Piping	Tinplate	Sash Weights	Mining Machinery
Stoves	Machinery	Iron Roofing	Tools and Tubing
Shovels	Muck Bars	Foundry Goods	Oil Well Supplies

Commenting editorially upon this canvass the Manufacturers Record states:

"Of the total value of the products of all industries in West Virginia in 1910, amounting to \$161,950,000, industries in which iron and steel enter were represented by \$38,711,000, of which \$22,435,000 were the value of the output of iron and steel works and rolling mills, \$6,732,000 of general shop construction and repairs by steam railroad companies, \$3,392,000 of foundries and machine shops, and \$2,151,000 of sheet iron, tin and copper products.

"West Virginia ranked fourth among the States of the country in 1912 in coke production, the State being one of the half a dozen in the Appalachian region containing 75 per cent. of the coal suitable for iron-making coke in this country. But not only is West Virginia shipping much of its coke to other parts of the country, but it is also shipping much of its coke-making coal to retort-oven plants in Illinois, Indiana and Ohio.

"It is time for West Virginia to expand the use of its own coke in a larger manufacture of pig-iron and to derive the full benefit from that industry in diversifying its iron and steel products.

"West Virginia was marked by Nature for production in manufacturing industries. Seventy per cent., or 17,000 of the 24,000 square miles, of its area are underlaid with coal of the finest quality and estimated at 231,000,000,000 tons.

"Above much of that coal are stands of timber, some of it a part of the remaining hardwood reserve of the country, covering more than 9,000,000 acres.

"Besides its coal, a determining factor in the ultimate location of industries of many kinds, West Virginia has unmeasured quantities of petroleum and natural gas for fuel, and its limestones and other rocks have already become the material for Portland cement and other products.

"Agriculturally, the development of the State has really only begun, inasmuch as attention has been directed largely upon the raw exploitation of its mineral and timber resources. That exploitation, however, has involved too much regard for immediate profit and too little for the creation of permanent industries that will be a source of constant wealth.

"Around the sources of raw material should rise the multitude of diversified industries of many kinds, and what is indicated in the 46 iron and steel working plants embodied in the Baltimore & Ohio canvass should incite local capital and investors in other parts of the country to make the most of West Virginia's industrial opportunities."

Further facts on any phase of the iron and steel resources and possibilities of West Virginia will be gladly furnished.

Baltimore & Ohio Railroad

W. W. WOOD, General Industrial Agent
Baltimore, Md.

HOMESEEKERS' RATES FOR 1915

Seaboard Air Line Railway

The Progressive Railway of the South

Announces the establishment of attractive Round-Trip Homeseekers' Rates to Progressive Florida.

TO	FROM	
	WASHINGTON, D. C.	CINCINNATI, OHIO
	January 12th, February 9th and FIRST and THIRD TUESDAYS in each succeeding month.	January 5th and 19th and FIRST and THIRD TUESDAYS in each succeeding month.
TICKETS GOOD FOR 21 DAYS		
NORTH FLORIDA		
Lake City	\$22.65	\$27.10
Quincy	24.55	25.60
Tallahassee	24.45	25.60
THE BEAUTIFUL LAKE COUNTRY		
Ocala	25.00	30.00
Orlando	25.00	30.00
Oviedo	25.00	30.00
Leesburg	25.00	30.00
Tavares	25.00	30.00
POLK COUNTY HIGHLANDS		
Bartow	25.00	30.00
PEERLESS PINELLAS		
St. Petersburg, Clearwater, Tarpon Springs, Elfers via Tampa	25.00	30.00
THE FAMOUS MANATEE COUNTY		
Palmetto, Parrish Bradentown, Bee Ridge Sarasota Venice	25.00	30.00

These tickets will be on sale at Washington, D. C., January 12th and February 9th, and two dates in each month thereafter. At Cincinnati on January 5th and 19th, and two dates in each succeeding month—the FIRST and THIRD TUESDAYS—good for 21 days. Stopovers south of Jacksonville going and returning.

The rates and service from The Nation's Capital, WASHINGTON, offers splendid opportunity to the people from the Eastern States to make a Florida trip cheaply and comfortably.

The CINCINNATI rates offer a similar opportunity to the people of the Central States.

You can find attractive openings in the progressive State of Florida. We shall be glad to answer your inquiry for complete information.

SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

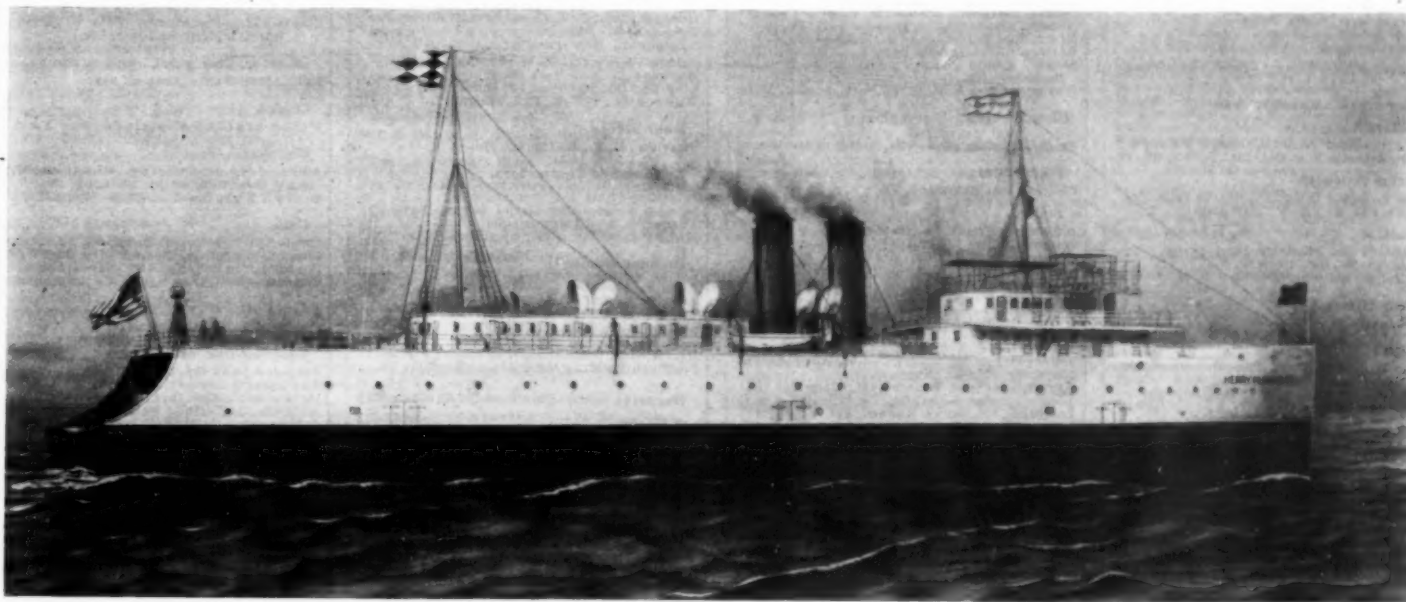
J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

All-Rail Route to Cuba Via Key West

When Henry M. Flagler, the founder of the Florida East Coast Railway, dreamed of the wonderful possibilities of the East Coast of Florida, he conceived broad and daring plans for carrying these dreams to fulfillment.

Prominently among his plans was one to build an all-rail route to Cuba. The last link of this plan has just been completed by his successors in building the big ferryboat, "Henry M. Flagler," to transport freight cars from Key West to Havana, and provide for the interchange of products of the United States and Cuba by a direct all-rail route.



THE "HENRY M. FLAGLER," RAILROAD FERRYBOAT, KEY WEST-HAVANA.

Nine of the leading railroads of the South are co-operating for the establishment of a fast freight service from all parts of the United States to Cuba via Key West, this service being known as the

"CUBAN ALL-RAIL ROUTE"

This magnificent steamer, illustrated here, has accommodations for thirty of the largest refrigerator cars, which will be carried on four sets of standard gauge track. In addition, it contains three cargo holds capable of being loaded directly either from the cars or through cargo ports at the side of the vessel. The distance from Key West to Havana, 100 miles, will be covered by this ferry steamer in eight hours, as required by schedule.

Any information desired regarding this service and the advantages it offers for quick and direct shipment to Cuba will be gladly furnished.

FLORIDA EAST COAST RAILWAY

(FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

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The French Oil Mill Mch. Co., Piqua, Ohio.
- Acetylene Service.**
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Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
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Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**
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White Co., The, Cleveland, Ohio.
- Automobiles. (Second Hand.)**
Mar-Del Mobile Co., Baltimore, Md.
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- Babbitt Metal. [See Anti-Friction Metal.]**
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Provident Savings Bank & Trust Co., Cincinnati, O.
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Dow Wire & Iron Works, Louisville, Ky.
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- Belting. (Leather, Canvas, Rubber.)**
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Druid Oak Belting Co., Inc., Baltimore, Md.
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Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Phila., Pa.
Schieren Co., Chas. A., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**
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Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffery Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown, (Philadelphia) Pa.
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- Belt Dressing.**
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Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
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Graton & Knight Mfg. Co., Worcester, Mass.
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- Block Fillers**
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- Blowers and Exhaust Fans.**
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Green Fuel Economizer Co., Matteawan, N. Y.
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South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
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Phoenix Iron Works Co., Meadville, Pa.
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- Boiler Tubes. [See Tubes, Boiler.]**
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Upson Nut Co., The, Cleveland, O.
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Lunkenheimer Co., The, Cincinnati, Ohio
Powell Co., Wm., Cincinnati, O.
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Newman Mfg. Co., Cincinnati, Ohio
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Hood Brick Co., B. Mifflin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Co., Johnson City, Tenn.
Scott Brick Co., Ala., Knoxville, Tenn.
Southern Face Brick Exchange, Birmingham, Ala.
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**
Killian Fireproofing & Brick Works, Killian, S. O.
Louisville Fire Brick Works, Highland Park, Ky.
Mexico Brick & Fire Clay Co., Mexico, Mo.
Pomona Terra-Cotta Co., Pomona, N. O.
Standard Brick Co., Macon, Ga.
Stevens' Sons Co., H., Macon, Ga.
Union Mining Co., Mt. Savage, Md.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingles Shale Brick Co., Birmingham, Ala.
Dunn Wire-Cut-Lag Brick Co., Conneaut, Ohio
Southern Face Brick Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
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Chase Fdry. & Mfg. Co., Columbus, O.
Fernholtz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Galton, O.
Steele & Sons, J. C., Statesville, N. C.
- Bridges. (Concrete.)**
Cunningham Construction Co., Shreveport, La.
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Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
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East St. Louis Bridge Co., East St. Louis, Ill.
Oregon Bridge Co., Lebanon, Ohio.
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Scherzer Rolling Lift Bridge Co., Chicago, Ill.
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- Buckets. (Orange Peel.)**
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Williams Co., The G. H., Cleveland, O.
- Buckets. (Dredging, Excavating, Sewer, etc.)**
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Williams Co., The G. H., Cleveland, O.
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- Buckets. (Ore Handling.)**
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Hayward Co., New York, N. Y.
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Starr Co., B. F., Baltimore, Md.
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Atlantic Stone Co., Atlanta, Ga.
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**
Harris Bros. Co., Chicago, Ill.
Southern Building Material Co., Norfolk, Va.
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- Cables. (Underground.)**
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**
Ambursen Co. (Tramway Department, New York, N. Y.)
Broderick & Bascom Rope Co., St. Louis, Mo.
Floy Mfg. Co., S., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
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Bliss Co., E. W., Brooklyn, N. Y.
- Canning Machinery and Supplies.**
Robins & Co., A. E., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Curd, Geo. B., Cincinnati, Ohio.
Electric Wheel Co., Quincy, Ill.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., O. W., Inc., West New Brighton, N. Y.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Western Wheeled Scraper Co., Aurora, Ill.
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Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**
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Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**
Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
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Lynchburg Foundry Co., Lynchburg, Va.
Phoenix Iron Works Co., Meadville, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Valk & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
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General Malleable Co., Warren, O.
Marion Malleable Iron Works, The, Marion, Ind.
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- Castings. (Steel.)**
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Riverside Steel Casting Co., Newark, N. J.
- Ceilings. (Metal.)**
Edwards Manufacturing Co., Cincinnati, O.
Keighley Metal Cell. & Mfg. Co. S., Pittsburgh, Pa.
- Cement.**
Cinchfield Portland Cem. Corp., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Kosmos Portland Cement Co., Inc., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Southern States Portland Cem. Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
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Allis-Chalmers Mfg. Co., Milwaukee, Wis.
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Froehling & Robertson, Richmond, Va.
Hunt & Co., Robt. W., Chicago, Ill.
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Morse Twist Drill & Mch. Co., New Bedford, Mass.
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- Clayworking Machinery. [See Brick and Clayworking Machinery and Supplies.]**
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- Clocks. (Watchman.)**
Watchman's Clock & Supply Co., New York, N. Y.
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- Coal Tipples.**
American Bridge Co. of New York, N. Y.
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Brecht Co., The, St. Louis, Mo.
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Duckett & Co., Inc., A. M., New York, N. Y.
- Concrete Construction. (Reinforced.)**
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Foster-Oreighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
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- Concrete Mixers. [See Mixers. (Concrete)]**
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Carnegie Steel Co., Pittsburgh, Pa.
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Jones & Laughlin Steel Co., Pittsburgh, Pa.
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- Concrete Reinforcing Wire and Wire Fabric.**
American Steel & Wire Co., Chicago, Ill.
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Albergo Pump & Condenser Co., New York, N. Y.
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Du Pont De Nemours Powder Co., E. I., Wilmington, Del.

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Dufur & Co., Baltimore, Md.

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International Filter Co., Chicago, Ill.

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Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

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Hood Brick Co., B. Mifflin, Atlanta, Ga.

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Bannon Pipe Co., P., Louisville, Ky.

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Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Pa.

Wagner's Sons Co., J. F., Louisville, Ky.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]**Fittings. (Wire Rope.)**

Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Baltimore, Md.

Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.

American Pipe & Construction Co., Phila., Pa.

American Spiral Pipe Works, Chicago, Ill.

Dart Mfg. Co., E. M., Providence, R. I.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

National Tube Co., Pittsburgh, Pa.

U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

Flare Lamps.

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

Flexible Joints.

Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

Floor Tile.

Northerness Mantel Co., W. J., Memphis, Tenn.

Flooring. (Oreosoted Block.)

Republic Oreosoted Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)

Whiting, William S., Asheville, N. C.

Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining.

Owensboro Sewer Pipe Co., Owensboro, Ky.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges.

Buffalo Forge Co., Buffalo, N. Y.

Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.

Faxon Co., J. W., Philadelphia, Pa.

Foundry Facings. (Talc and Soapstone.)

Georgia Talc Co., Asheville, N. C.

Foundry and Machine Shops.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

Goldens Foundry & Machine Wks., Columbus, Ga.

Grainger & Co., Louisville, Ky.

Lombard Iron Works, Augusta, Ga.

Titus, E. E., Petersburg, Va.

Valk & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]**Fuel Economizer.**

Green Fuel Economizer Co., Matteawan, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil.

Gulf Refining Co., Pittsburg, Pa.

U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings.

Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.

La Belle Iron Works, Steubenville, O.

McCalla, Inc., Harold, Philadelphia, Pa.

Portsmouth Steel Co., Portsmouth, O.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Sheet & Tube Co., Youngstown, O.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Steel Products Co., The, Savannah, Ga.

Garbage Disposal Plants.

Stacy-Bates Co., Minneapolis, Minn.

Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]**Gas Machines.**

Kemp Mfg. Co., O. M., Baltimore, Md.

Milburn Co., Alex. N., Baltimore, Md.

Gas Plants.

Power & Mining Machinery Co., Oudaky, Wis.

Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.

Smythe Co., The S. R., Pittsburgh, Pa.

Westinghouse Machine Co., Pittsburgh, Pa.

Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.

Gulf Refining Co., Pittsburg, Pa.

Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

Gears.

Caldwell & Sons Co., H. W., Chicago, Ill.

Crescon-Morris Co., Philadelphia, Pa.

James Mfg. Co., D. O., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mich.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Geologists.

Davis, Geo. C., Phila., Pa.

Froehling & Robertson, Richmond, Va.

Grimsley, G. P., Martinsburg, W. Va.

Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.

Jeffrey Mfg.

Insulated Wires and Cables.

Safety Insulated Wire & Cable Co., New York, N. Y.

Insulating Materials.Continental Fibre Co., Newark, Del.
General Electric Co., Schenectady, N. Y.
Johns-Manville Co., H. W., New York, N. Y.**Insurance.**

Hartford Steam Boiler Inspector & Insurance Co., Hartford, Conn.

Iron.Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Iron Works Co., Beaver Falls, Pa.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.**Irrigation Machinery.**

Cameron Steam Pump Wks., A. S. New York, N. Y.

Investment Securities.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Kettles. (Steam Jacket.)

Badger & Sons Co., E. R., Boston, Mass.

Key Seater. (Portable.)

Barr & Son, John T., Brooklyn, N. Y.

Labor Agency.

Diamond Labor Agency, Chicago, Ill.

Lace Leather.

Graton & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)Boston-Economy Lamp Division, Danvers, Mass.
General Electric Co., Schenectady, N. Y.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.**Lamps. (Carbon and Tungsten.)**

Newman Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric, Gas.)

Western Gas Construction Co., Ft. Wayne, Ind.

Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]**Landscape Architects** [See Engineers.] [Landscape]**Lathe Attachment. (Combination)**

Garrett Attachment Co., Nashville, Tenn.

Lathes. (Engine.)

Greaves, Kiusman Tool Co., The, Cincinnati, O.

Lawn Furniture. (Wire.)Bolles Iron & Wire Works, J. E., Detroit, Mich.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.**Leadite.**

Leadite Co., Inc., The, Philadelphia, Pa.

Lights. (Portable Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

Liquor Filters.

International Filter Co., Chicago, Ill.

Lithographers, Engravers.

Young & Selden Co., Baltimore, Md.

Lockers (Steel)Bernstein Mfg. Co., Phila., Pa.
Keighley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.
Merritt & Co., Camden, N. J.
Van Hurling, J. M., Atlanta, Ga.**Locomotives.****INDUSTRIAL.**
Baldwin Locomotive Wks., The, Philadelphia, Pa.
Climax Mfg. Co., Corry, Pa.
Ord, Geo. R., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.**RAILWAY.**Baldwin Locomotive Wks., The, Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.**Looms and Weaving Machinery.**Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
Saco-Lowell Shops, Boston, Mass.**Loom Harness.**

American Supply Co., Providence, R. I.

Lubricants.Albany Lubricating Co., New York, N. Y.
Ole Elevator Co., New York, N. Y.**Lubricants. (Graphite.)**

Dixon Crucible Co., Joseph, Jersey City, N. J.

Lumber.

Industrial Lumber Co., Elizabeth, La.

Lumber. (Crescote.)

American Crescote Works, New Orleans, La.

Lumber. (Heavy Construction, Pitch Pine, etc.)Industrial Lumber Co., Elizabeth, La.
National Lumber & Crescote Co., Texarkana, Ark.**Lumber Buggies.**

Soule Steam Feed Works - Meridian, Miss.

Lumber Stackers.

Soule Steam Feed Works, Meridian, Miss.

Machinery. (Special.)Bliss Co., E. W., Brooklyn, N. Y.
Elmer, Lewis T., Alpena, Mich.
Universal Machine Co., Baltimore, Md.**Machinery and Supplies. (New and Second-Hand Bargains.)**Assets Purchasing Co., Wheeling, W. Va.
Bailey & James Boiler & Mch. Co., Joplin, Mo.
Boston Iron & Metal Co., Balto., Md.
Cleveland Belling & Machinery Co., Cleveland, O.
Consolidated Iron & Metal Co., Chattanooga, Tenn.
Dunette & Son, New York, N. Y.
Harris Bros. Co., Chicago, Ill.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Jeffrey-Griner Machinery Co., Philadelphia, Pa.
Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mach. Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.

New River Co., Macdonald, W. Va.

Nussbaum & Co., V. M., Fort Wayne, Ind.

Pannepacker Engineering Co., Chicago, Ill.

Power Equipment Co., New York, N. Y.

Prentiss Tool & Supply Co., New York, N. Y.

Randle Machinery Co., Cincinnati, O.

Read Co., Howard W., Philadelphia, Pa.

Sachsenmaier & Co., George, Philadelphia, Pa.

Samuel, Frank, Philadelphia, Pa.

Seyfert's Sons, Inc., L. E., Philadelphia, Pa.

Southern Mchry. Exchange, Jacksonville, Fla.

South Side Fdry. & Mch. Co., Charleston, W. Va.

Stearns, John C., Kansas City, Mo.

Stewart, Paul, Cincinnati, O.

Tampy Machinery Exchange, Tampa, Fla.

Thaw & Williams, Cincinnati, O.

Toomey, Frank, Inc., Philadelphia, Pa.

Wilson Machy. Co., Harold, R., St. Louis, Mo.

Winterer Co., Herman L., Philadelphia, Pa.

Machine Tools.

Garrett Attachment Co., Nashville, Tenn.

Greaves, Kiusman Tool Co., The, Cincinnati, O.

Machinists. (Engineers.)

Universal Machine Co., Baltimore, Md.

Magnesia Materials.

Johns-Manville Co., H. W., New York, N. Y.

Magnetic Separators.Buchanan & Co., Inc. C. G., New York, N. Y.
Paxon Co., J. W., Philadelphia, Pa.**Mail Chutes.**

Cutler Mail Chute Co., Rochester, N. Y.

Mantels. (Tile.)

Northcross Mantel Co., W. J., Memphis, Tenn.

Mantels. (Wooden.)

Northcross Mantel Co., W. J., Memphis, Tenn.

Mechanical Draft.Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.**Metal Ceilings. [See Ceilings, Metal.]****Metaline.**

Metaline Co., Long Island City, N. Y.

Metal. (For Tanks, Culverts, Roofing, etc.)

Portsmouth Steel Co., Portsmouth, O.

Metal Culverts. [See Culverts.] (Corrugated Metal.)**Metal Shingles. [See Shingles.] (Metal.)****Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)****Metal Work. [See Sheet Metal Work.]****Metal-Working Machinery. (Sheet.)**

Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Mattoon, Ill.

Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

Mill Engineers and Architects.O'Brian, W. O., Memphis, Tenn.
Sirrins, J. E., Greenville, S. C.**Mill Supplies.**Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Lombard Iron Works, Augusta, Ga.
Lunkenheimer Co., The, Cincinnati, O.
Mecklenburg Iron Works, Charlotte, N. C.
Salem Foundry & Machine Wks., Salem, Va.
Starr Co., R. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.**Mining Machinery. (Gold, Copper, Plate, etc.)**Bartlett & Snow Co., C. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLachlan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.**Mixers. (Concrete.)**Standard Scale & Supply Co., Pittsburgh, Pa.
Van Duzens, Rops Co., The, Columbus, O.**Mixing Machinery.**

Dauning, W. D., Syracuse, N. Y.

Mortar Colors.

Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Municipal Castings.

Clarksville Fdry. & Mach. Works., Clarksville, Tenn.

American Steel & Wire Co., Chicago, Ill.**Waterbury Co., The, New York, N. Y.****Nails. (Cut.)**

La Belle Iron Works, Steubenville, O.

Nails and Spikes.La Belle Iron Works, Steubenville, Ohio.
Republic Iron & Steel Co., Youngstown, O.
Youngstown Sheet & Tube Co., Youngstown, O.**Nuts. [See Bolts, Nuts, Rivets, etc.]****Office Furniture (Steel)**

Merritt & Co., Camden, N. J.

Oil. (Crescote.)

Barrett Mfg. Co., Philadelphia, Pa.

Oil. (Lubricating, Etc.)Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.**Oil Cans.**

Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]**Oil Separators.**

Stewart Heater Co., Buffalo, N. Y.

Oil Well Machinery.Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.**Oil Well Tubing and Casings.**

Byers Co., A. M., Pittsburgh, Pa.

Ore Handling Machinery. [See Coal Handling Machinery.]**Ornamental Iron Works.**

Bolles Iron & Wire Wks., J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Cincinnati Mfg. Co., Cincinnati, O.

Dow Wire & Iron Works, Louisville, Ky.

Ohio Elevator & Mach. Co., The, Columbus, O.

Scribner & Sons Co., The, L., Cincinnati, O.

Snead Architectural Iron Works, Louisville, Ky.

Oxygen.

International Oxygen Co., New York, N. Y.

Oxygen Generators.

International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.International Oxygen Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.**Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**Graton & Knight Mfg. Co., Worcester, Mass.
Jenkins Bros., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.
United Lead Co., New York, N. Y.**Packing. (Lead Wool.)**

United Lead Co., New York, N. Y.

Paint. (Cement Floors, Masonry, Stucco, etc.)

Cheesman & Elliott, New York, N. Y.

Paint. (Metal Surfaces.)Cheesman & Elliott, New York, N. Y.
Dixon Crucible Co., Joseph, Jersey City, N. J.**Paint. (Roofing, Building, etc.)**Cameron & Barkley Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Cheesman & Elliott, New York, N. Y.**Paper. (Roofing, Building, Sheeting, etc.)**Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.**Partitions. (Wooden Rolling.)**

Van Hurling, J. M., Atlanta, Ga.

Patents and Inventions.

Russell Machine Co., F. K., Dallas, Tex.

Patent Attorneys.Brown, Eugene O., Washington, D. C.
Chandler & Chandler, Washington, D. C.
Coleman, Watson E., Washington, D. C.
Duffie & Co., John S., Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Fitzgerald & Co., W. T., Washington, D. C.
Hodges, Vernon E., Washington, D. C.
Jenner, Herbert, Washington, D. C.
Lacey, R. S. & A. R., Washington, D. C.
McLundie, A. S., Chattanooga, Tenn.
Parker, C. L., Washington, D. C.**Pavement Filler.**

Barrett Mfg. Co., Philadelphia, Pa.

Paving Blocks. (Crescote.)

International Crescoting & Construction Co., Galveston, Tex.

National Lumber & Crescoting Co., Texarkana, Ark.
Republic Crescoting Co., Indianapolis, Ind.
Southern Crescoting Co., Ltd., Sildell, La.
Southern Wood Preserving Co., Atlanta, Ga.
U. S. Wood Preserving Co., New York, N. Y.
Wyckoff Pipe & Crescoting Co., Inc., The, New York, N. Y.**Paving Blocks. (Granite.)**

Southern Marble & Granite Co., The, Spartansburg, S. C.

Paving Brick.Adamantine Clay Products Co., North Mountain, W. Va.
Carlie Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.
Dunn Wire-Cut-Lug Brick Co., Conneaut, Ohio.
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.**Perforated Metal.**Caldwell & Son, H. W., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendricks Mfg. Co., The, Carbondale, Pa.
Manhattan Perforated Metal Co., New York, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.**Petroleum Refiners.**Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.**Phosphate Machinery.**Aising Engineering Co., J. R., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Lobby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link Belt Co., Nicetown (Philadelphia), Pa.
McLachlan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Impact Pulv. Co., Chicago, Ill.
Valk & Murdoch Iron Works, Charleston, S. C.**Pig Iron.**La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.**Pile Drivers.**

Vulcan Iron Works, Chicago, Ill.

Pile Driving and Wharf Building.

Murray & Co., Inc., W. D., Norfolk, Va.

Piling. (Crescote.)American Crescote Works, New Orleans, La.
Intern'l Crescoting & Const. Co., Galveston, Tex.
Southern Crescoting Co., Ltd., Sildell, La.**Pillow Blocks.**

Golden's Foundry & Machine Co., Columbus, Ga.

Pipe.Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, Ohio.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.**Pipe. (Cast Iron.)**American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Oliver & Sons, James B., Chicago, Ill.
Donaldson Iron Co., Emsau, Pa.
Giamorgan Pipe & Foundry Co., Lynchburg, Va.
Greenspan's Sons Iron & Steel Co., Joe., St. Louis, Mo.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, O.
Standard Cast Iron Pipe & Fdry. Co., Bristol, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Warren Fdry. & Mach. Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.**Pipe. (Coil.)**Frick Co., The, Waynesboro, Pa.
National Pipe Bending Co., New Haven, Conn.
York Mfg. Co., York, Pa.**Pipe. (Corrugated Culvert.) [See Culvert (Corrugated Metal).]****Pipe (Lead)**

United Lead Co., New York, N. Y.

Pipe. (Riveted.)

Keeler Co., E., Williamsport, Pa.

Pipe. (Second Hand.)Eagle Pipe Supply Co., New York, N. Y.
Marine Metal & Supply Co., New York, N. Y.**Pipe. (Spiral Riveted.)**

American Spiral Pipe Works, Chicago, Ill.

Pipe. (Spiral Steel.)

Standard Spiral Pipe Works, Chicago, Ill.

Pipe. (Sewer, Vitrified.) [See Sewer Pipe, Vitrified.]**Pipe. (Wood.)**

Wyckoff & Son Co., A., Elmira, N. Y.

Pipe. (Wrought Iron.)Byers Co., A. M., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.**Pipe Bends.**

Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.

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Pulverizers.

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Austin Mfg. Co., Chicago, Ill.
Gruendler Pat. Crusher & Pulv. Co., St. Louis, Missouri.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.

Pumping Machinery.

Affiliated Manufacturers Co., Milwaukee, Wis.
Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
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Blakeslee Mfg. Co., Du Quoin, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
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Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Erie Pump & Equipment Co., Erie, Pa.
Holland Machine Co., New York, N. Y.
Jeanerette Iron Works Co., Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Pacific Flush Tank Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Dean Bros. Steam Pump Works, Indianapolis, Ind.
Erie Pump & Equipment Co., Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Holland Mch. Co., New York, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Wood & Co., R. D., Phila., Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cardwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Equipment Co., Erie, Pa.
French Oil Mill Mfg. Co., Erie, Pa.
Holland Mch. Co., New York, N. Y.

Pumps. (Oil and Gasoline.)

Keystone Boiler & Fdry. Co., Columbia, Pa.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakeslee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Clayton Air Compressor Works, Cambridge, Mass.
Cook, A. D., Lawrenceburg, Ind.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Scranton Pump Co., Scranton, Pa.
Snow Steam Pump Works, The, New York, N. Y.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Worthington, Henry R., Harrison, N. J.

Pumps. (Trench.)

Affiliated Manufacturers Co., Milwaukee, Wis.

Pumps. (Turbine Driven.)

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.

Pumps. (Water-works.)

Goulds Mfg. Co., Seneca Falls, N. Y.

Holland Mch. Co., New York, N. Y.

Pump Leathers.

Graton & Knight Mfg. Co., Worcester, Mass.

Punching and Shearing Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Purchasing Agents.

U. S. Purchasing Corporation, New York, N. Y.

Racks (For Pattern Storage.)

Merritt & Co., Camden, N. J.

Railroads. [See Industrial, Agricultural and Commercial Opportunities.]

Railroad Equipment and Supplies. (New and Second-hand.)

American Frog & Switch Co., Hamilton, O.
Bailey-Lebby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Curd, Geo. B., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
MacLary, J. H., Buffalo, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. G., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cumberland, Md.
Weir Frog Co., Cincinnati, O.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., Harold R., St. Louis, Mo.
Zelicker Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs & Switches.

American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Conley Frog & Switch Co., Memphis, Tenn.
Kilby Frog & Switch Co., Birmingham, Ala.

Newhall Engineering Co., Geo. M., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Foster Co., L. B., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Gulf States Steel Co., Birmingham, Ala.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Loris & Co., Henry, Philadelphia, Pa.
MacLary, J. H., Buffalo, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. G., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
United States Rail Co., Cumberland, Md.
Wilson & Co., E. H., Philadelphia, Pa.

Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]

Railings and Grilles. (Brass.)

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Fdry. & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Hunt Co., Inc., O. W., West New Brighton, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.

Rams. (Hydraulic.) [See Hydraulic Ram.]

Reamers.

Morse Twist Drill & Mch. Co., New Bedford, Mass.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Huetteman & Cramer Co., The, Detroit, Mich.
Remington Machine Co., Wilmington, Del.
Viller Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.

Reinforcing Bars. [See Concrete Reinforcing Bars.]

Riveters. (Pneumatic.)

Independent Pneumatic Tool Co., Chicago, Ill.

Road Machinery.

Austin-Western Road Mch. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Holt Manufacturing Co., The, Peoria, Ill.
Kelly Springfield Road Roller Co., Springfield, O.
Thev Automatic Shovel Co., Lorain, Ohio.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Roadmaking Materials.

Barrett Mfg. Co., Philadelphia, Pa.
Rocmar Road Corp. of America, Phila. Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Binders

Barrett Mfg. Co., Phila., Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Roller. (Steam.)

Austin-Western Road Mch. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mch. Co., Kingston, N. Y.

Road Oil.

Gold Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.
Gold Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.

Gallon Iron Works & Mfg. Co., The, Gallon, Ohio

Rock Crushers. [See Crushers, Rock.]

Roller Covering Supplies.

American Supply Co., Providence, R. I.

Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Asphalt Ready Roofing Co., New York, N. Y.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.

Roofing. (Metal Shingles.) [See Shingles, Metal.]

Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.

Roofing. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Portsmouth Steel Co., Portsmouth, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.

Rope. (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rops. (Wire.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., O. W., West New Brighton, N. Y.
Waterbury Co., New York, N. Y.

Rope Drives.

Caldwell & Son, H. W., Chicago, Ill.
Crescent-Norris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rubber Goods.

Kureka Fire Hose Mfg. Co., New York, N. Y.

Rules. (Steel.)

Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Safes and Vaults.

York Safe & Lock Co., York, Pa.

Sand.

Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Sand. (Foundry.)

Newport Sand Bank Co., Inc., Newport, Ky.

Sap Stain Preventive.

Church & Dwight Co., New York, N. Y.

Sash Chains.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Saws.

Gorlach Co., Peter, Cleveland, O.
Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.
Chase Machine Mfg. Co., Orange, Mass.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Saws. (Band.)

Smith Machine Co., H. B., Smithville, N. J.

Saws. (Hack.)

Starrett Co., L. S., Athol, Mass.

Sawmill Dogs.

Soule Steam Feed Works, Meridian, Miss.

Sawmills.

Gainesville Iron Works, Gainesville, Ga.
Gibbs Machinery Co., Inc., Columbia, S. C.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.

Sawmill Machinery.

Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Machine Mfg. Co., Orange, Mass.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Saw Sharpeners.

Carborundum Co., Niagara Falls, N. Y.

Vitified Wheel Co., Westfield, Mass.

Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

Sawing Outfits. (Contractors and Industrial.)

Rutland Foundry & Machine Co., Bennington, Vt.

Scales.

Standard Scale & Supply Co., Pittsburgh, Pa.

Screens. (Fly, Window and Door.)

Cincinnati Mfg. Co., Cincinnati, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

Converse Co., Inc., F. S., Lestershire, N. Y.
Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
New Jersey Wire Cloth Co., Trenton, N. J.

Screenings. (For Concrete and Road Construction.)

American Ballast Co., Knoxville, Tenn.

Screws. (Machine.)

Progressive Mfg. Co., Torrington, Conn.

Screws. (Safety Set.)

Allen Manufacturing Co., Inc., Hartford, Conn.

Screw Machine Products.

Progressive Mfg. Co., Torrington, Conn.

Separators. (Dust.)

Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Sewer Flushing Siphons.

Pacific Flush Tank Co., New York, N. Y.

Sewer Joint Compounds.

Pacific Flush Tank Co., New York, N. Y.

Sewer Pipes. (Vitrified.)

Bannon Pipe Co., P., Louisville, Ky.
Blackmer & Post Pipe Co., St. Louis, Mo.
Cannelton Sewer Pipe Co., Cannelton, Ind.
Owensboro Sewer Pipe Co., Owensboro, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.

Sewer Pipe and Drains. (Monolithic Concrete)

Requarth Co., O. W., Charlotte, N. C.

Sewer Supplies

Clarksville Fdry. & Mach. Works, Clarksville, Tenn.

Sewage Pumping and Disposal Apparatus.

Pacific Flush Tank Co., New York, N. Y.

Shafting. (Cold Rolled Steel.)

American Steel & Wire Co., Chicago, Ill.

Shafting. (Polished Steel.)

Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Pardee Works, O., Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Union Drawn Steel Co., Beaver Falls, Pa.

Shafting. [See Pulleys, Shafting and Hangers.]

Sharpening Stones.

Carborundum Co., Niagara Falls, N. Y.

Vitified Wheel Co., Westfield, Mass.

Sheet. Brass and Copper.

McKenna Bros. Brass Co., Pittsburgh, Pa.

Sheet Metal Work.

Atlas Metal Works, Dallas, Tex.
Danzer Metal Works, Hagerstown, Md.
Dixie Culvert & Metal Co., Atlanta, Ga.
Long Star Culvert Co., Houston, Tex.
McMillan Bros., Jacksonville, Fla.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
Salisbury Metal Culvert Co., Salisbury, N. C.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.
Voigtmann & Co., Chicago, Ill.

Sheet Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Sheet Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.
Portsmouth Steel Co., Portsmouth, O.
Republic Iron & Steel Co., Youngstown, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Shelving. [(Steel) Vault, Store, Etc.]

Merritt & Co., Camden, N. J.
Van Harlingen, J. M., Atlanta, Ga.

Shingles. (Metal.)

Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.

Shop Furniture. (Steel.)

Merritt & Co., Camden, N. J.

Shovels. (Special for Any Purpose.)

Conneaut Shovel Co., The, Conneaut, Ohio.

Shovels. (Steel, Brass, Aluminum, etc.)

Conneaut Shovel Co., The, Conneaut, Ohio.

Shutters. (Iron.)

Roller Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.

Shutters. (Steel Rolling.)

Kinner Mfg. Co., Columbus, O.

Shutters. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Silos. (Metal.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Skylights and Cornices.

Danzer Metal Works, Hagerstown, Md.

Slate. (Roofing, Sanitary, Structural, etc.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.

Sluice Gates and Appliances.

Goldwell-Wilcox Co., Newburgh, N. Y.

Smokestacks. (Iron and Steel.)

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield Iron Works, Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Buildings. (Designers, Builders.)
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Speed Architectural Iron Works, Louisville, Ky.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
Gracible Steel Castings Co., Lansdowne, Pa.
Softman & Co., Inc., R. Co., Baltimore, Md.
Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
Honey-Hodges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chattanooga Boiler Works, Chattanooga, Pa.
Hoffman & Co., Inc., R. Co., Baltimore, Md.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
[See Curb Protector Steel.]

Steel Sheet Piling.
Frank, J. E., Atlanta, Ga.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.

Stills. (Turpentine.)
McMillan Bros., Jacksonville, Fla.

Stirrups. (Building.)
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.

Stock Room Racks, Bins, Etc.
Merritt & Co., Camden, N. J.

Stokers. (Hand.)
Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
Babcock & Wilcox Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Stone. (Building.)
Atlantic Stone Co., Atlanta, Ga.
Bedford Steam Stone Works, Bedford, Ind.
Erickpatrick Sand & Cement Co., Birmingham, Ala.

Stone. (Crushed.) [See Crushed Stone.]

Stone and Gravel Plants.
Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
Elec. Storage Battery Co., The, Philadelphia, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Strapping Leather.
Griston & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
Allegheny Steel Co., Pittsburgh, Pa.
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bourne-Fuller Co., The, Cleveland, Ohio
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
East St. Louis Bridge Co., East St. Louis, Ill.
Granger & Co., Louisville, Ky.
Greenspan's Sons Iron & Steel Co., Jos., St. Louis, Mo.
Hoffman & Co., Inc., R. Co., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Onondaga Bridge Co., Lebanon, Ohio.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Richmond Structural Steel Co., Richmond, Va.
Sauls & Sons Co., Wm. B., Pittsburgh, Pa.
Schreiber & Sons Co., The L., Cincinnati, O.
Speed Architectural Iron Works, Louisville, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Coal Iron & R. Co., Birmingham, Ala.
Vincennes Coal Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Stump Pullers.
Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surveying Instruments.
Weber & Co., Philadelphia, Pa.

Swinging Engines.
Dake Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
Weir Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Broderick & Hascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
Georgia Talc Co., Ashville, N. C.

Tanks. (Iron and Steel.)
American Bridge Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Casey-Hodges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chattanooga Boiler Works, Chattanooga, Pa.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Bros. Co., Newport, Ky.
Hartley Boiler Works, Montgomery, Ala.
Hendricks Mfg. Co., Carbondale, Pa.
Kaiser Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Memphis Steel Construction Co., Memphis, Tenn.
New York Central Iron Works Co., Hagerstown, Md.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield Iron Works, Macon, Ga.
Struthers-Wells Co., Warren, Pa.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Twin City Boiler Works, Bristol, Va.-Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Tapes. (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Service.
American Telephone and Telegraph Co.

Tenoner. (Box and Crate.)
Chase Turbine Mfg. Co., Orange, Mass.

Terra-Cotta. (Ornamental.)
Atlanta Terra-Cotta Co., Atlanta, Ga.
Maryland Terra-Cotta Co., Baltimore, Md.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Threshers.
Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
Economy Engineering Co., Chicago, Ill.

Tile (Drain)
Oconee Brick & Tile Co., Milledgeville, Ga.

Tile (Interior)
Amer. Enam. Brick & Tile Co., New York, N. Y.
P & F Tile Co., Birmingham, Ala.

Tile (Mantel and Promenade)
Hood Brick Co., B. Miffin, Atlanta, Ga.

Tile (Structural)
Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Creosoted.)
American Creosote Works, New Orleans, La.
Republic Creosoting Co., Indianapolis, Ind.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Transformers.
Crocker-Wheeler Co., Ampere, N. J.
Triumph Electric Co., Cincinnati, O.

Trench Excavator. [See Excavator (Trench).]

Trucks. (Dry Kiln.)
Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Bernstein Mfg. Co., Phila., Pa.
Chase Fdry. & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
Westinghouse Machine Co., Pittsburgh, Pa.

Trucks (Storage Battery) [For Warehouses & Industrial Plants]
Elwell Parker Electric Co., The, New York, N. Y.

Trust Companies. [See Bankers and Brokers.]

Tubes. (Boiler.)
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
National Tube Co., Pittsburgh, Pa.

Tube Well Strainers.
Cook, A. D., Lawrenceburg, Ind.

Tubing.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Turbines. (Hydraulic.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Davis Foundry & Machine Wks., Rome, Ga.
Lefell & Co., James, Springfield, O.
Salem Foundry & Machine Wks., Salem, Va.
Smith Co., S. Morgan, York, Pa.

Turbines. (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Starveant Co., B. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Turn Buckles.
Broderick & Hascom Rope Co., St. Louis, Mo.

Turntables.
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

Twine.
Columbian Rope Co., Auburn, N. Y.

Important Information For Advertisers in Manufacturers Record

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Advertising copy not requiring proof must reach us one week in advance of publication day.
When proof is required, two weeks in advance.
Width of column, 2 1/4 inches; length, 13 inches.
Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tools. (Machinists.)
Holland Mfg. Co., Erie, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. S., Athol, Mass.

Tools. (Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.

Tools. (Tinner's.)
Danzon Metal Works, Hagerstown, Md.

Torches.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Towers. (Electric Transmission.)
American Bridge Co. of New York, N. Y.
Scale & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Columbia Pump & Well Co., Washington, D. C.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Des Moines Steel Const. Co., Memphis, Tenn.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
Conley Frog & Switch Co., Memphis, Tenn.
Upson Nut Co., Cleveland, O.

Traction Engines.
Fairbanks-Morse & Co., Atlanta, Ga.
Holt Mfg. Co., The, Peoria, Ill.

Tramway. (Overhead.)
Amburn Co. (Tramway Department), New York, N. Y.
Speidel, J. G., Reading, Pa.

Tramways. (Portable.)
Amburn Co. (Tramway Department), New York, N. Y.

Tramway. (Wire Rope.)
Amburn Co. (Tramway Department), New York, N. Y.

Unions.
Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburgh, Pa.

Vacuum Cleaning Apparatus.
King Co., F. E., Norfolk, Va.
United Electric Co., The, Canton, O.

Valves.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Frick Co., The, Waynesboro, Pa.
Giamorgan Pipe & Fdry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
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Powell Co., Wm., Cincinnati, O.
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York Mfg. Co., York, Pa.

Valve Boxes.
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Titus, E. E., Petersburg, Va.

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Starveant Co., B. F., Hyde Park, Boston, Mass.

Vices.
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Troy Wagon Works Co., The, Troy, O.
Western Wheeled Scraper Co., Aurora, Ill.

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Southern Sewer Pipe Co., Birmingham, Ala.

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Wall Ties.
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Page Woven Wire Fence Co. Adrian, Mich.

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Cameron & Barkley Co., Charleston, S. C.
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Cloy & Sons, James B., Chicago, Ill.
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Columbian Iron Works, Chattanooga, Tenn.
Donaldson Iron Co., Emmaus, Pa.
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Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.
Leadite Co., Inc., The, Philadelphia, Pa.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, Ohio.
Pomona Terra-Cotta Co., Pomona, N. C.
Salem Fdry. & Machine Works, Salem, Va.
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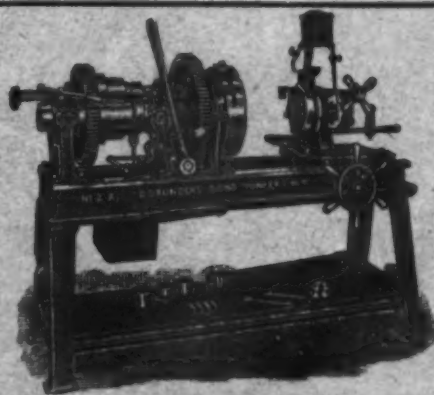
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